

meeting of the American Zinc Institute at St. Louis, April, 1938, he emphasized the importance of preserving those industries which now provide self-sufficiency in important industrial minerals, as follows:

"In this connection I should like to suggest that a reduction in the present tariff on lead and zinc can hardly be considered in the public interest if viewed from the standpoint of national defense. The fact that these metals are produced in large quantities in neighboring countries is not adequate protection, as we have no assurance that supplies could be obtained from these countries in an emergency except at exorbitant cost or by military effort. It seems to me that the maintenance of the security afforded by our ability to supply our own needs of these important industrial raw materials should receive careful consideration."

In the past 12 months the domestic zinc industry has suffered drastic curtailment. Several mines and one smelter, which resumed operations in 1937 after a protracted shutdown, were forced to close again in 1938 on account of low prices. In the Tri-State area it has been reported that production has continued at many mines where the selling price of the product covered operating costs without provisions for depletion, depreciation, or adequate return on capital investment. Further shutdowns have occurred in 1939.

Early in May the American Zinc Lead and Smelting Company notified its employees of its intention to discontinue operation of the slab zinc division of its East St. Louis smelter probably before the end of the second quarter of the year. It was stated that that would be the first time that this division has been entirely closed since it was built and put into operation in 1914. This action was predicated, according to the company, on increased operating costs brought about in the last three years through increased cost of labor, fuel, supplies, and taxes, which make it impossible to operate under current prices for zinc. Later in the same month, the United Zinc Company, Moundsville, West Virginia, announced that, effective June 1, a 10 per cent cut in salaries and wages would be imposed because of the serious financial condition of the company. According to press reports, the workers declined to accept the cut. The plant was closed on June 1 for an indefinite period.

Since the terms of the Canadian Trade Agreement were made public, representatives of the zinc industry have protested vigorously the reduction in the duty on zinc and have been urging the government to restore the tariff to its former level. This can be accomplished either by the state department or by Congress. The state department could initiate action under the provision in the trade agreement which gives each country the right to withdraw or modify the concession granted on any article "if, as the result of the extension of such concession to other foreign countries, such countries obtain the major benefit of the concession, and if, in consequence imports of the article concerned, increase to such an extent as to threaten serious injury to domestic producers."

THE state department has been studying the situation in detail with a view to determining whether the actual effects of the tariff reduction merit action along this line. Congress could restore the tariff to its former level by legislative enactment and a bill to this effect has been introduced in the present session. It is understood, however, that Congress is reluctant to inaugurate this means of restoring specific reductions in the various trade agreements as such action eventually might vitiate the entire reciprocal trade treaty program.

Import statistics for the first four months of 1939 indicate that the quantity of slab zinc entered for consumption totaled 9,350 tons compared with 1,782 tons in the same period of 1938. Information is not available as to how much of this metal eventually will be exported in manufactures with benefit of drawback. Nevertheless, the large increase in 1939 suggests that substantial quantities of foreign zinc may be invading domestic markets.

The foregoing analysis of the zinc industry indicates clearly that domestic producers are confronted with a critical situation resulting primarily from unsatisfactory conditions abroad, the effects of which on the domestic market have been intensified by the 20 per cent reduction in tariff.

BOOKLET TO HELP MINERS NEEDING FINANCIAL AID

A NEW booklet, entitled "Financing of Mines," is now being mailed free to those who request it by the Mining Department of the Los Angeles Chamber of Commerce, Los Angeles, California. The work of compiling the data for the booklet was done by a group of men on the chamber's mining committee.

Members of the sub-committee on financing of mines include: G. A. Joslin, chairman, and Walter D. Abel, Julian Boyd, T. M. Hamilton, Victor J. Hayek, Charles M. Heron, Robert Linton, Harry Lee Martin, E. O. Slater, B. B. Snyder, H. R. Van Wagenen, Eugene E. Whiteley, and Frank R. Wicks.

The purpose of the booklet is to educate the little fellow who goes into mining and the small mine operator who needs financial aid. It discusses types of mines and the markets available for various minerals; acquiring a mine; how to choose an engineer; the engineer's report; lease, purchase, and operating contracts; exploration and development; the treatment plant; and assaying.

The group has also prepared a special pamphlet, "Financing Mines and Prospects by Partnerships, Stock Selling, or with the RFC."

FEDERATED METALS TO HAVE NEW SAN FRANCISCO PLANT

THE Federated Metals Division of the American Smelting and Refining Company has started work on a new \$500,000 plant at Army and Evans Street in San Francisco. The company produces ingot metals, sheet and glazing lead, lead pipe and fittings, and practically every non-ferrous alloy.

UNUSUAL PROGRAM BEING DEVELOPED FOR A.M.C. MEET

Preliminary reports relative to the speakers being secured for the American Mining Congress Sixth Annual Metal Mining Convention indicate that a real treat is in store for those who are fortunate enough to be able to attend. The convention is to be held in Salt Lake City, Utah, on August 28 to 31.

Speakers who have accepted to date are: Senator William H. King of Utah; Senator Key Pittman of Nevada; C. S. Ching, director of personnel relations, United States Rubber Company, Akron, Ohio; Dr. Leroy U. Gardner, director of laboratories, Trudeau Foundation, Saranac Lake, New York; F. H. Brownell, chairman of the board, American Smelting and Refining Company, New York City; Walter E. Trent, Rocky Mountain Metal Foundation, Washington, D. C.; John W. Hanes, under-secretary of the treasury, Washington, D. C.; Elmer F. Andrews, administrator, Wage-Hour Division, United States Department of Labor, Washington, D. C.; D. C. Jackling, president, Utah Copper Company, New York City; Lewis W. Douglas, president, Mutual Life Insurance Company of New York; and others equally as prominent.

Plans are being made to hold another session of the "Governors' Silver Conference," organized in Reno, Nevada, on March 27, 1939, to be held the day following the American Mining Congress Convention, September 1, 1939.

TEXAS COLLEGE RECEIVES GIFT OF CYANIDE PLANT

A COMPLETE cyanide plant has been presented to the College of Mines, El Paso, Texas, by the Mexican Division of the American Smelting and Refining Company, W. P. Schumacher, assistant general manager, 1112 Mills Building, El Paso.

A new metallurgical building will be erected on the campus to provide housing for the gift, together with other metallurgical equipment to be added by the college. The plant will be highly valuable as it will permit the students to see the complete operation of the cyanide process.

The plant, which was completed in time for exhibition at the recent state fair at Parral, Mexico, includes an ore bin, mechanical feeder, small ball mill, thickeners, agitators, settling tank, precipitation plant, and a small furnace for melting concentrates into bullion.

ARIZONA SECTION, A. I. M. E., TO HOLD MEET AT BISBEE

THE summer meeting of the Arizona Section, A. I. M. E., will be held in Bisbee, Thursday and Friday, July 27 and 28.

Visiting members will register at the Copper Queen Hotel in Bisbee on the afternoon of Thursday, July 27, and a schedule of trips for the following day will be available at that time. The evening meeting will be held at the Bisbee Golf Club at Naco, Arizona, and transportation by train or bus to Naco will be available.

On Friday, July 28, there will be trips to surface and underground working at Bisbee and trips to the smelter in Douglas.

26 acres, 280 of w
East Northern.
3 East Plaza Str
associates have
quicksilver mine s
east of Healdsbu
e is directly betw
Sonoma mines, and
Iver-Baer and Clov
wa producers. T
ree claims and has
ph-grade cinnabar,
re of ore of a gr
the rotary furn

At the properties owned or controlled by Valley Gold Mines, Inc., in Willow Valley near Nevada City, California, the roads, buildings, and equipment are being reconditioned, and assessment work is being done on the mining locations held by the company. A survey is being made also for a diamond drilling program.



Operations are directed by H. P. Davis, and Oliver Chatfield is foreman.

Russell H. Harris of Los Angeles and Arthur W. Parker of Portland, Oregon, are preparing the Gold Crest placer mine for operation. The property is located on Dutch Creek about seven miles from Junction City, Trinity County, California. Construction of a road, diversion dam, and flume is under way and it is planned to install two hydraulic monitors. The operation will eventually employ about 15 men.

Charles Hope of Los Angeles, California, is developing the First Chance mine near Challenge, California, and dragline equipment and a washing plant are being installed. The channel above Slate Creek will be worked.

The September Queen Mines Company, Berry Creek, California, is offering \$25,000 of its capital stock to investors. According to a statement issued by Dr. E. A. MacBeth, president, the new tunnel being driven to open up the ore bodies is nearing the vein which was exposed in a 275-foot

preliminary exploration tunnel. Proceeds from the stock issue will be used to finance completion of the tunnel. The exploration work is said to have exposed the vein for a width of 100 feet without reaching its limit. The mine was acquired last fall from C. H. Johnson, Berry Creek.

The El Oro Dredging Company has completed operations on the D. D. Rice property in Oregon Gulch south of Redding, California, and the dragline dredge is being dismantled. Operations were confined to about 30 acres.

Milling machinery valued at \$15,000 was destroyed when the roundhouse of the Yreka Western railroad burned. The equipment was owned by F. A. Gowing, president and manager of the Gold Bar Mining Company, Sawyers Bar, California.

Marion P. Raab and William Bower, Mojave, California, are shipping approximately 25 tons of ore weekly to the Burton Brothers mill at Rosamond, California. They are operating what is known as the old Olsen-Lewis lease on a portion of the Starlight claim, owned by the Lodestar Mining Company. For the past three months the ore has ranged from \$10 to \$35 a ton. The property is also known as the Gray Eagle Extension.

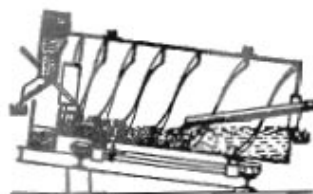
The tunnel being driven at the property of the Genesee Consolidated Mines Company near Walkermine, California, is soon expected to cut the copper-bearing vein which outcrops on the surface for a width of approximately 100 feet. Assessment work is being done on the unpatented

claims of the Gruss and Five Bears properties, also owned by Genesee, and the company is planning extensive development of these properties at a later date. The Gruss was a producer of high-grade gold ore from open cuts and quarries in the early days. The early operators sank a shaft some 150 feet, but when they encountered copper ore operations ceased. Ore at the bottom of this shaft is said to run as high as 20 per cent copper with some high-grade molybdenum sulphide also. The Five Bears is opened by a 1,800-foot tunnel. Operations at the mine are directed by George Baglin, vice-president and general manager, Felt Building, Salt Lake City, Utah.

L. W. Cheney of Foresthill, California, has filed injunction and damage actions in Placer County Superior Court which may delay the proposed major hydraulic operations of William E. Wilson, also of Foresthill. Wilson and associates hold under option the Paragon mine two miles east of Foresthill, which they are planning to mine by hydraulic methods. Cheney contends that his mining property, upon which he sets a value of \$125,000, is endangered and that he has been forced to suspend his own activities by Wilson's hydraulic operations on Volcano Creek. Cheney asks a permanent injunction and claims damages of \$6,000. Wilson has applications before the state division of water resources for permits to divert a total of 32,000 acre feet of water yearly from several creeks tributary to the North Fork of the American River.

No. 6:

HARDINGE COUNTER CURRENT CLASSIFIER



A "Mechanical Classifier" even though it doesn't employ the drag or scraper principle. It rotates around its own settling pool and lifts and rolls the oversize up an incline—but does not scrape it! Fines overflow free of oversize because agitation is reduced where it should be. This Classifier will not stall when overloaded, or balk when started full of material. Write for Bulletin 39A.

HARDINGE

COMPANY, INCORPORATED - YORK, PENNSYLVANIA

New York, 112 East 42nd Street Chicago, 205 West Wacker Drive San Francisco, 501 Howard Street Denver, 817 Seventeenth Street



CONICAL MILLS



COUNTER CURRENT CLASSIFIERS



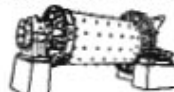
THICKENERS CLARIFIERS



RUGGLES-COLES DRYERS



CONSTANT WEIGHT FEEDERS



TUBE ROD AND BATCH MILLS

Henry Scholten of San Francisco is engaged in overhauling the machinery at the Bruner gold mine at Albany Flat near Angels Camp, California, with a view to starting mining operations in the near future. The shaft is 400 feet deep and the equipment includes electrically operated machinery.

Associated Metals, Inc., Ira Mahon, president, 301 Alexander Building, San Francisco, California, has been authorized by the California Division of Corporations to sell 150,000 shares of its common stock at 10 cents a share, the proceeds to be used in further development of the Oro mine at Downieville, California. Past operations were conducted through five tunnels, and the mine is equipped with a 10-stamp mill. It is proposed to make a survey of the property, to be followed by the driving of a raise from the No. 5 to the No. 4 tunnel level. After that work is completed, consideration will be given to expenditures for additional milling equipment.

Approximately 750,000 tons of tailings will be treated in the new plant recently placed in operation at the Plymouth Consolidated mine, Plymouth, California. The mill has a capacity of 500 tons in 24 hours. Tailings are hydraulicked to a four-inch Krogh sand pump, powered by a 40-horsepower motor. They are elevated 65 feet and, after passing through a trash screen, are flumed to two 10 by 10 Devereaux agitators. They are then delivered to 10 56-inch Fagergren flotation machines and two 44-inch Fagergren ma-

chines which are used as cleaners. Feed from the agitators to the flotation cells is controlled by an eight-inch Grigsby valve. Flotation concentrate is filtered by a three-leaf, four-foot Oliver filter, and the resulting product will be shipped to the smelter. Cyanide solutions are precipitated by the Merrill-Crowe process. Flotation tailings are sent to a 6 by 25-foot Dorr classifier in which a sand slime separation is made at about 270 mesh. The slimes are laundered to waste and the sands pumped to six 12 by 34-foot cyanide leaching tanks. The mine is owned by the Argonaut Mining Company, Ltd., Alex F. Ross, superintendent, Jackson, California. Hal M. Lewers is superintendent of the Plymouth Tails Division at Plymouth.

At the directors' meeting of the Alaska Juneau Gold Mining Company, 1022 Crocker Building, San Francisco, California, held June 22, dividend payments were revised for the second time in less than six months, with the declaration of 15 cents a share, payable August 1 to stock of record July 3. This is a reduction of 10 cents a share from the former rate. The present basis has been adopted in order to conserve cash and place the company in an improved working capital position. On December 22, 1938, the company established a dividend policy of 25 cents a share instead of a regular quarterly 15 cents plus an extra of 15 cents, as had been paid since November 1, 1933.

The Iowa Hill Dredging Company is operating in Indian Canyon near Iowa Hill,

California, with a crew of 18 men employed. C. G. Pritchard is foreman. At present two shifts are working and a third may be added at a later date. J. E. Sterne of Sacramento, California, heads the company.

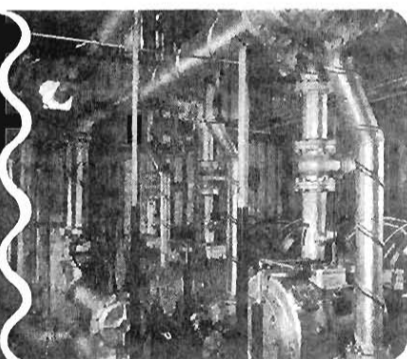
I. Blum, Mojave, California, is reported to be planning the reopening of the Mojave Smelting Company plant in the near future. The structure was erected five years ago at a cost of approximately \$125,000. Three years ago it was acquired by Blum, but litigation has held up reopening of the plant. F. W. Bower is assayer and engineer for the company.

Work is being resumed at the Gold King mine in the Skidoo district by C. O. Mittendorf, Randsburg, California, with a crew of five men. Mittendorf recently made a 1,000-ton shipment of ore from the property to the Golden Queen mill at Mojave, California, a distance of approximately 165 miles.

Production is being increased at the Outland placer property in the Butte Creek district 15 miles northeast of Chico, California, operated by F. C. Outland. The gravel is mined by power shovel and gold is recovered by the usual placer methods. There is said to be sufficient material available for several years' operation.

The Bald Mountain mine near Forest, California, has been leased by M. F. Lusk, Elton O. Carvin, and Ora and Ray Huggins from Norman McGregor, Downieville, California. The property has been rehabilitated and active operations are under

**HOW TO
SAVE
MONEY ON
PRESSURE
LINES**



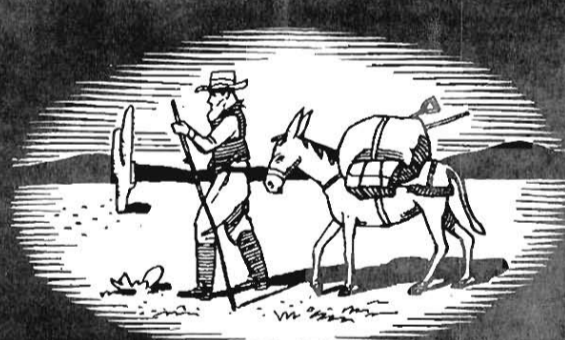
Use NAYLOR Light-Weight Leak-Tight PIPE

Naylor Pipe is made to order for pressure lines. It's the only light-weight pipe that's built to take it. Why use heavy pipe when you can do the job and save money with Naylor? The exclusive Lockseam Spiralweld structure makes Naylor stronger, safer, more flexible pipe and its light weight saves you money. Sizes 4" to 30" in diameter with all type fittings and connections. Complete fabrication service.

WRITE FOR CATALOG NO. 37

NAYLOR PIPE COMPANY
1245 EAST NINETY-SECOND STREET
CHICAGO, ILLINOIS

NAYLOR LOCKSEAM SPIRALWELD PIPE



BED ROCK INVENTORY

Inventories are cut, purchasing routine is simplified, freight costs are reduced and prompt deliveries are assured if you concentrate your orders for cyanidation or flotation reagents with Cyanamid. Convenient stocks at Azusa, California and El Paso, Texas.

Descriptive stock list and quotations on request

AMERICAN CYANAMID & CHEMICAL CORP.

AZUSA, CALIFORNIA



EL PASO, TEXAS

way on a channel of gold-bearing gravel. The underground workings were found to be in good condition, and a minimum of repairs was required to bring them to a safe working standard.

The Eureka drift mine near Downieville, California, is being reopened and water is to be pumped from Eureka Creek for the washing plant. The tunnel was originally driven by the present operator in 1934 and 1935 and is 1,100 feet long with several raises to the gravel above. Due to a shortage of water for working the property, plans are being considered for mechanical handling of the gravel to assist in getting large volume production during normal water seasons, Jerry Bickel, Box 881, Nevada City, California, is the owner and operator.

A dividend of 1½ cents a share, payable June 30 to stock of record June 21, was declared by the board of directors of the Carson Hill Gold Mining Corporation, 206 Sansome Street, San Francisco, California. Similar dividends were paid in the last two quarters.

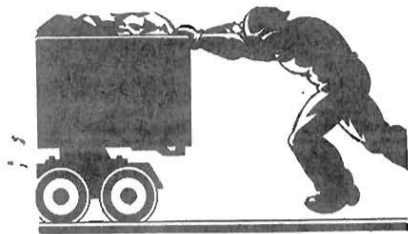
Coleman and Clark have optioned gravel property in the Greenhorn district near Nevada City, California, and are testing with small equipment. If values prove to be satisfactory, it is planned to install a larger plant.

The Calmich Mining Company, Mack C. Lake, president, 74 New Montgomery Street, San Francisco, has taken over extensive holdings in the Mooney Flat and Smartville, California, district, owned by the Interstate Land Holding Company, W. G. Allen, secretary, Smartville, California. The properties taken over practically surround the Blue Point mine, at present operated by the Calmich company, and provide a large, continuous body of gravel for several miles along the Yuba River and Deer Creek. The agreement calls for payment of rental and royalties, and carries purchase option. If the company decides to carry on hydraulicking operations, it will be necessary to provide for storing the tailings behind dams or by stacking.

The General Dredging Corporation, W. H. Haines, president, 505 Bank of America Building, Sacramento, California, is considering plans for stepping up the daily output of its first unit at Folsom, California, from 4,000 cubic yards daily to 5,000 cubic yards daily. Gravel being worked ranges from 8 to 30 feet in depth. The second unit on Mississippi Bar near Folsom is equipped with pontoons, two-yard bucket, revolving screen, and a self-contained power plant. It is handling 2,000 yards daily. The third dredge near San Andreas is also moving about 2,000 yards a day.

A cyanide plant has been installed at the Wahoo mine six miles west of Darwin, California. Four men are employed at the mine under the direction of Paul Braun Darwin, owner and operator. The property is producing about five tons of gold ore daily.

A crew of six men, under the supervision of W. Van Seatern, is engaged in sampling the Hakermoller, Van de Water,



Demuth, and Davenport properties along Irish Creek near Garden Valley, California. The properties are held under option by H. A. Weiler of Garden Valley and Georgetown, California.

The Lode Development Company, Charles Hopper Brown, superintendent, Garden Valley, California, is constructing a road to the Tell Ranch to permit transportation of a tonnage of broken ore to its mill located between Garden Valley and Greenwood. The ranch is owned by Henry Bacchi of Lotus and was held under lease by H. A. Weiler until recently.

The Little and Brink dredge is being placed in operation on the Henry Bacchi property near Lotus, California. A floating dragline dredge capable of handling 2,000 yards daily is to be used and there is said to be sufficient ground available to assure two years' work. Fifteen men are employed under the supervision of Harry Little of Oroville. The Brink Brothers of Oroville and H. A. Weiler of Garden Valley and Georgetown, California, are also associated in the project. The operations

are centered on Greenwood Creek where it enters the South Fork of the American River.

The Silver King mining properties, owned by Oscar Hendrickson, Essex, California, have been optioned to David A. Keith of Los Angeles, for \$75,000. The claims included in the group are the Silver King, Water Boy, and Bonanza King, all located in the Providence Mountains northwest of Needles, California. Machinery at the mine was also sold to Keith for \$3,000.

A 50-ton flotation mill is being installed at the Gum Tree mine Mojave, California, by H. E. Robinson, lessee, and the new plant is expected to be ready for operation in the near future. The mill is being constructed with a view to increasing its capacity to 100 tons at a later date. The old vertical shaft of the Gum Tree mine, which has not been used for 30 years, has been reopened. Although work has not yet been started on the main vein, the ore being taken out is said to be of satisfactory grade.

C. A. Law, 459 North Hayworth Street, Los Angeles, California, and associates have leased the Great Northern quicksilver mine located on Empire Creek near Gottville in Siskiyou County, and extensive operations are planned.

The Santa Marianna quicksilver claim at New Almaden, Santa Clara County, California, has been taken over by Purinton and Chegwin who are producing about 15

Are you on the right track?

Heavier track material will eliminate costly delays, wrecks, track dishing and spreading

The Colorado Fuel and Iron Corporation
General Offices: Denver Steel Works: Pueblo

**YOU'D GET AWFULLY
tired
AT THIS JOB!**



**300,000 MILES
of
MATERIAL MOVING**

Day in and day out, this Pioneer Conveyor Belt hauls materials at 400' per minute. Nobody watches it much, for it's been doing the job for 10 years in its own steady, low-cost way. After 300,000 miles of material moving this Pioneer Belt is still giving reliable, trouble-free service.

Here's why! Pioneer manufactures "balanced" belting with no weak member. Balanced to wear evenly, to move maximum loads at minimum cost.

And more why! Pioneer builds belts for the specific needs of the job, for in no other way can we make good our claim—that we will prove to give you lowest ultimate cost per operating unit of any belt you can purchase!

You'll profit by sending for the booklet, "How Pioneer Rubber Mills can help you get MORE VALUE for your belting dollar."

**LOWER COSTS WITH
PIONEER
BALANCED
BELTING**
CONVEYOR · TRANSMISSION
ELEVATOR

PIONEER RUBBER MILLS

353 Sacramento St., San Francisco
Plant at Pittsburg, California

Sales Offices:

Los Angeles Seattle Salt Lake City Chicago
Portland Tacoma Denver St. Louis

flasks a month with their retort equipment. A larger unit is to be installed during the summer. L. A. Purinton formerly operated the Silver Creek quicksilver mine near San Jose, California.

Following an eight-month shutdown, the Sugarman mine near Sonora, California, is being reopened by the Bald Mountain Mines, Inc., Ralph H. Butler, vice-president and manager, 5 Rose Court, Sonora. Following unwatering of the shaft, active mining will be undertaken, and drifting will be continued on the 450-foot level. Rolland A. Vandergrift of Sacramento, California, is president of the company which was recently incorporated with a capitalization of \$75,000.

Edward F. Webber and William Von der Hellen of Medford, Oregon, are installing a 3,500-yard dragline dredge on the Klamath River between Yreka and Happy Camp, California. The new plant was constructed by the Judson-Pacific Company of San Francisco. Gold recovery units are mounted on steel pontoons and the plant is Diesel-powered throughout. A Lima dragline will be used for excavation. California offices for the project are located at Yreka, California.

Old furnaces at the Abbott quicksilver mine near Wilbur Springs, California, are being cleared away preparatory to starting underground work. The project is under the supervision of Everett Freels. The mine is owned by Mrs. Barber De Bles.

Mrs. Ruddle Brown, owner and manager of the Summers-Kent gold mine near Tuolumne, California, is reported to be planning large-scale operations for the property. Development work is at present being carried on with a small crew.

Mining operations have been resumed at the Altoona quicksilver mine located 24 miles west of Castella, California. The property is owned and operated by C. W. Erickson of Loomis, California. A 40-ton rotary furnace was installed at the mine last year.

The Mogul Gold Mining Association has resumed operations at the Mabel mine near Silverton, Colorado, with a force of four men. Charles E. Fetterhoff, Box 225, Silverton, is president and general manager. The company also holds the mine under lease from the San Juan Mining Company, F. R. Steelsmith of Des Moines, Iowa, president. Work on the Molas mine in the same district has been stopped.

Work has been started on the smelter which Joseph McAuliffe of Idaho Springs, Colorado, and associates are establishing in the Forks Creek area near Idaho Springs. The Boulder Ore Sampler, Inc., is reported to be the operating name. Some equipment is being moved from a plant near Boulder. No lead ores will be accepted as it will be a copper smelter. It is expected to draw ores from Boulder, Gilpin, and Clear Creek counties.

A 50-foot gold-silver vein is stated to have been opened by the Treasure Mountain Gold Mining Company in the extension of the Santiago tunnel at a point 1,600 feet from the portal. The company, headed by Guy L. V. Emerson, Midland Savings Bank, Denver, Colorado, has been developing its holdings on Treasure Mountain near Silverton for about seven years. Essential camp buildings and mining machinery and a Diesel power plant have been installed and if present development justifies, plans will be made for a mill. D. M. Haynes, Silverton, is general manager.

Approval of a preferred stock issue of \$50,000 to refinance development work is reported to have been granted at a special meeting of stockholders of the Lucky Discovery, Inc. Company holdings include the National mine in Gilpin County; Moon and Sun Up and other claims in La Plata County; and the East Tennessee claims in Lake County. C. R. McKay of Central City, Colorado, is general manager.

The Animas River Corporation, J. Walters, Jr., managing director, has purchased equipment and lease on the Gold Run dump at Telluride, Colorado, from Arnold Knoefler of Telluride. The dump is part of the San Juan Metals Corporation holdings and was taken under lease by Knoefler last year. Additional equipment will be installed by the new owners, who will continue operations started by Knoefler. W. E. Ellis of Boulder, who was associated with Knoefler, is in charge of equipment installation for the Animas River company.

A 25-ton pilot tungsten mill will be installed on ground leased from the Mystery Gold Mining Company by Roy Blakely, according to recent reports. The plant will be operated on tungsten ore taken from portions of the Mystery Gold property at Silverton, Colorado, by lessees, who have been shipping their ore. Warren C. Prosser, 426 U. S. National Bank Building, Denver, is president and general manager and Sam Manick of Silverton is mine superintendent.

A 15-ton ball mill is to be taken to the Zulu mine in Prospect Basin near Telluride, Colorado, by Martin Wenger of Telluride, owner of the mine. A drift is being run in the mine to open the Star Gazer vein and is now in 160 feet. The property is also known as the Kokomo mine.

Three shifts are being operated by the Mill Tailings Recovery Company in its cyanide plant where 40 to 60 tons of tailings are being treated daily. The tailings are from the old Portland mine dump at Colorado City. Albert V. Hagen of Colorado Springs is president of the Mill Tailings company and Merrill Walker, Colorado Springs, is superintendent. E. L. Sweeney of Denver is consulting engineer.

Edward J. Miller of Blackhawk, Colorado, and associates are leasing the We-Got-Em mine at Blackhawk and preparing for increased production of gold and silver ore. The property, formerly operated with the Reform mine by the Cornucopia Mining Company, is now part of the holdings of the Gilpin County Gold Mining Corporation.

COLORADO

Quite often ore bodies are given a rough reconnaissance sampling by widely separated drill holes, the distance being narrowed down as work progresses.

However, it is much better to prove and sample a given area properly, so work can commence there, than to try to scatter the sampling and have to delay operations on any scale for a long time. Start in a given area and obtain all the information necessary; then sample other areas.

THERE are two general methods of drilling used today: diamond drilling and churn drilling. The diamond drill cuts by rotating a diamond-studded bit in the hole. The churn drill cuts by the raising and dropping of a heavy bit. Either method may be used for vertical holes. Both drills will recover a core if desired. Core barrels and special drills are made for churn drills. Diamond drills can drill at any angle and so are used underground almost exclusively to drill ore bodies above, below, and to one side of the opening in which they are located. The type of drill selected for vertical holes from the surface depends upon who will give the better contract price—the diamond or churn drill contractor. One must realize the results are dependent upon the driller, and not on the drill.

One of the worst mistakes that can be made in sampling ores for metallurgical tests is to take samples that are not duplicating the ore as the future mill will receive it. That is, the sample may be allowed to oxidize for weeks before it is tested. Then, when the mill is placed in operation, the expected results are not forthcoming, and some fast thought and work are required to make the mill perform as it should. Or, the ore may be tested with different water than will be used at the mill. The correct way is to seal samples air-tight and also include enough water to make the tests required; then there is no chance of oxidation or contamination. The money thus spent will be repaid later in having the mill operate satisfactorily.

The test work should be done by someone who is directly connected with the company, or who cannot be influenced by the possible sale of machinery in the future. His one job should be to obtain data that can be duplicated in the field. Many of our mining schools maintain testing laboratories and charge only what the test is worth. They are the laboratories which should do test work unless, of course, the individual company is large enough to maintain its own testing laboratory.

I have become impressed by the number of times that a mine has been turned down by one company, only to be made into a profitable enterprise by some other mining company. I feel that this is due to samplers searching for a mine answering a preconceived description, rather than one which could be worked by a means later to be developed. For instance, certain well-known mining companies can only make a mine of small tonnage pay dividends; so all others that they investi-

gate of a different nature, they needs must turn down or make a failure of them. In slightly different words, a mine should be developed to produce its full tonnage, be it 10 or 10,000 tons per 24 hours. There is no reason why any mining company cannot operate mines of widely varying capacities with success.

I have made no attempt to tell the sampler the exact way to hold his tools or go about his duties. That comes only after practice. If he can be guided into safe channels of doing his job, then there has been accomplished a great good to the mining industry. Always one should strive to increase accuracy so that the job may be well done.

DRAGLINE DREDGE OF LORD AND BISHOP NEAR VALLEY SPRINGS

AN INTERESTING placer gold mining plant is being operated by Lord and Bishop at the city of Stockton's reservoir, about six miles north of Valley Springs in California. It combines a huge Diesel-powered, multiple-flume, gold-panning machine, or dredge, and a new Diesel-powered three-yard dragline.

Here is how the plant is set up. A small river, scarcely more than a fast stream, runs along one side of the field being worked. The dragline first digs out an area of about 100 feet square. This fills with water and forms a pond on which a dredge-like boat floats on pontoons. The boat is a two-deck affair, approximately 50 by 75 feet. Installed on the top deck is a 100-kw. Diesel generator which provides the power necessary to run the individual electric motors of the boat's winches and pumps.

A three-yard hopper is at the front end of the dredge which was built by the Bodinson Manufacturing Company of San Francisco. The dragline, digging up the front side of the pond, dumps each bucket full into this hopper.

The hopper feeds the material into the trommel. This is a long steel cylinder about four feet in diameter which extends

through the center of the boat. The cylinder is perforated for its entire length and revolves constantly.

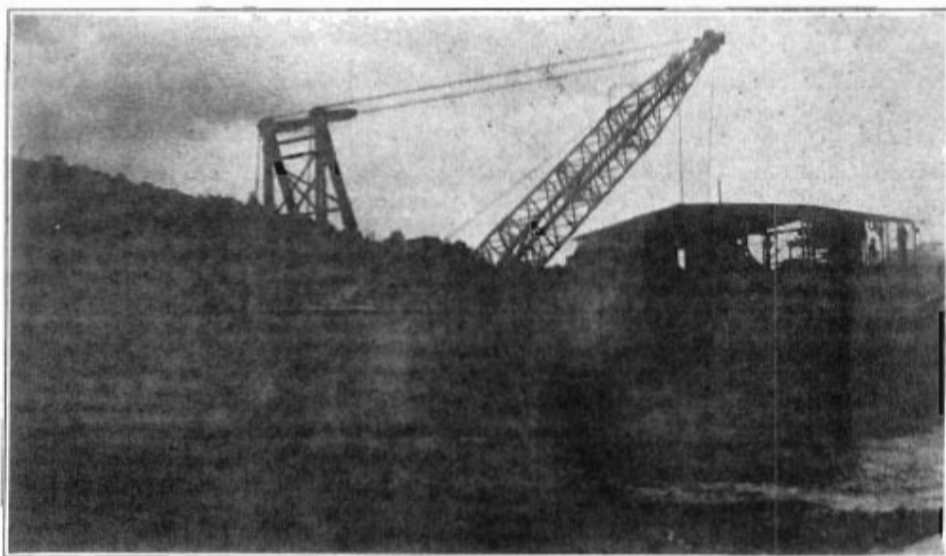
A water pipe is independently suspended inside the trommel and blasts water into the material feeding into it from the hopper. This makes a very wet muck. As the trommel revolves, the sand, gold dust, and water are expelled through the holes in the trommel. Rocks stay inside, pass on down the inclined trommel, and are carried to the tailings pile about 35 feet behind the boat by a flat belt on a metal boom.

The mixture of water, sand, and gold expelled from each side of the trommel passes over a series of flumes. The flumes are lined with a special heavy screen called expanded metal. This screen looks like the foundation screen for building plaster, but is much heavier and designed especially for this work. Old carpet rugs are under the screens. Quicksilver is poured in each of the "pockets" formed by the screen. As the material from the trommel washes over the screens, the heavy gold drops into the screens where it amalgamates with the quicksilver.

After the water and sand passes over the screens, it continues to wash over a series of Hungarian riffles which extend lengthwise on the boat to the back end where it is expelled. A final ball box is placed at the end of the riffles to catch any run-away quicksilver.

After certain periods, the screens are lifted and the rugs which hold the gold amalgam are washed off into buckets. The material is then washed again to rid it of any sand and put into a flour sack or similar porous cloth container. When the sack is squeezed the free quicksilver passes through the cloth leaving the gold and quicksilver amalgamation behind. The amalgamated "quick" is then taken to the laboratory, put into a retort, and the gold separated from the quicksilver by a heat process. Both metals return to their natural states making it possible to re-use the quicksilver.

(Continued on Page 36)



The dragline dredge operated by Lord and Bishop near Valley Springs, California. Approximately 4,500 yards of gravel are treated daily.

L. Crockett has been appointed to supervise the installation of a 20-ton pilot mill for the Pugo Mining Company at Camp 4, Baguio, Mountain Province, Philippine Islands, according to **Tomas Mapua**, president of the corporation. Installation of the mill was started several weeks ago, but when it was found that special skilled handling was required the president obtained the services of Crockett.

S. C. Faneuf has been appointed mine superintendent of the Pan Philippines Corporation, Lahuy Island, Caramoan, Camarines Sur, Philippine Islands. Faneuf has had extensive mining experience in Mexico. He was formerly assistant general manager of Nueva Cia. Minera La Mazata y Anexas, and has been associated with the Amparo Mining Company and Cia. Minera Piedra Bola, S. A.

Glen E. Fassler, until recently with the Duval Texas Sulphur Company at Orchard, Texas, is at Idaho Springs, Colorado, where he is reopening an old copper-gold-silver mine, the Silver Dollar, consisting of one claim in the Russell Gulch district of Gilpin County. After rehabilitating hoisting facilities and cleaning out some of the old workings, he will examine the property to determine its possibilities.

Ben H. Parker, 905 Thirteenth Street, Golden, Colorado, has been granted a year's leave of absence from the Colorado School of Mines, where he is assistant professor of geology, in order to undertake geological investigations for the Argentine government in South America. Parker is also president and general manager of the Gold Crest Mining Company, with holdings in the Kokomo district of Summit County. He will be replaced at the school of mines by **John C. Haff** of the University of Wichita.

OBITUARIES

Percy Sloan, 62, died July 1 at his home in Vallicita, California. He was one of the owners of the Big Springs gold mine located near Angels Camp, California.

Frank X. Boucher, 80, pioneer of Butte, Montana, and one-time purchasing agent for the original Colorado Smelting Company at Williamsburg, Montana, died June 11 in Butte.

John H. Wakefield, president of the Jack Wakefield Mining Company, died July 11 at Nogales, Arizona. He was 83 years old and had been a resident of southern Arizona for 43 years.

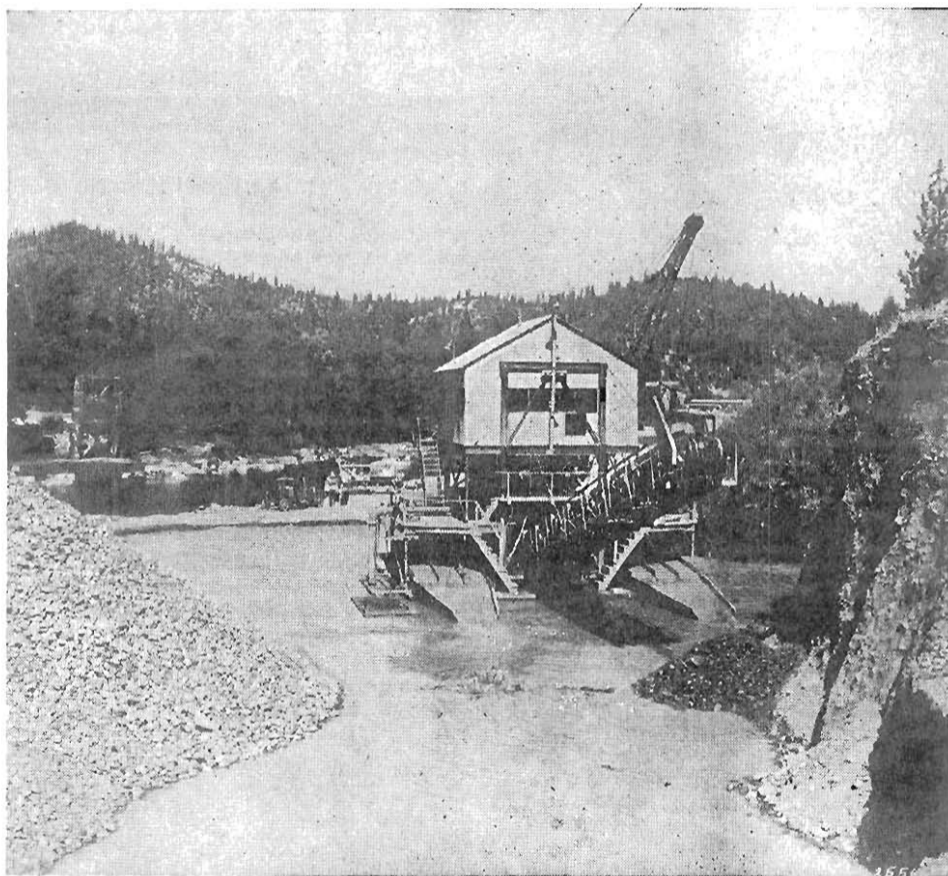
Abbot A. Hanks, 71, president of Abbot A. Hanks, Inc., assayers, chemists, and testing engineers, died June 17 at his home in San Francisco. The firm was founded by his father in the early days of San Francisco.

Gilbert Christensen, 26, mine foreman for the Andes Copper Company, was killed in a powder blast at the company's mine near Portrerillas, Chile, recently. He had been employed with the company about two years and prior to that had worked for the Lava Cap and the Golden Center mines in the Nevada City-Grass Valley district of California.

C. J. Lehman, president of the Shipsey Mining Company, died June 29. He had owned numerous properties in the Rand district, among which were the Consolidated and the Wedge, and at the time of his death he held a 40 per cent interest in the King Solomon mine, having been associated with the late Ed Shipsey in that property for 25 or 30 years. Shipsey died in March. The death of the owners is expected to make no difference in the operating schedule of the King Solomon mine and mill.

C. Snowden Arthur of Denver, Colorado, died May 19, 1939, after an illness of several weeks. After an elementary education in the Denver public schools he joined the navy, serving for five years. He then entered the Colorado School of Mines and was graduated in 1913 with the degree of engineer of mines. For the next five years he followed mining in Colorado and Arizona, until 1918 when he took a position with the Great Western Sugar Company where he was assistant insurance manager and accountant for nine years. Later he

ECONOMY AND EFFICIENCY PROVEN IN OPERATION



This standard Judson-Pacific Floating Dragline Dredge is installed and in operation at Weaverville, California, for The Viking Dredging Company.

Reports from the workings indicate a new record for economy and efficiency of operation and complete satisfaction with the equipment in every respect.

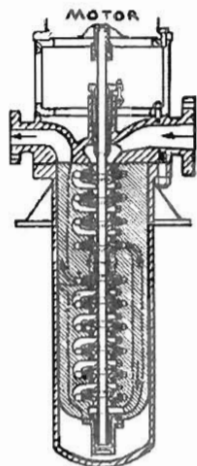
For full information about design, construction, operation, and cost of this or other types of floating or portable dragline dredges, write to the Judson-Pacific Co.

DESIGNERS AND BUILDERS OF FLOATING AND PORTABLE DRAGLINE DREDGES

JUDSON-PACIFIC COMPANY

1200 SEVENTEENTH ST. : SAN FRANCISCO, CALIF.

ALADDIN'S LAMP WAS A PIKER compared to the magic of a BYRON JACKSON HYDROPRESS!



Up to 7000 feet—way over a mile — this ruggedly constructed pump lifts from 10 to 250 gallons per minute.

Based on the magic of modern engineering, and scientific construction, this Byron Jackson Hydropress is compactly and sturdily designed, yet will pump economically small capacities to higher heads than have generally been considered practical with a centrifugal pump. Made with a vertical shaft that practically eliminates bearing loads, using a SINGLE stuffing box at suction pressure only, this Hydropress pump will give years of economical, trouble-free service under these extremely unusual working conditions.

Byron Jackson Co., Dept. MI-133
P. O. Box 1307, Arcade Station,
Los Angeles, Calif.

Please send me complete information
about the Byron Jackson Hydropress Pump:

Name.....
Company.....
Address.....
City..... State.....

Established 1872

BYRON JACKSON CO.
Box 1307, Arcade Station, Los Angeles, Cal.
Sales Offices: New York, Pittsburgh, Chicago,
Atlanta, Houston, Salt Lake City

BYRON JACKSON
CENTRIFUGAL
Established **PUMPS** 1872
FOR EVERY SERVICE

was salesman for the Robinson-Chase Company of Denver for several years and then returned to mining.

Jerry O. H. Newby, mining engineer and lumberman, died July 8 at his home in Ojo Sarco, New Mexico. He was born in Colorado in 1874 and had lived in Arizona, New Mexico, and Mexico almost all of his life. After graduation from mining school he spent several years in geological investigations up and down the Rocky Mountain chain and finally settled down to the operation of a mine in Chihuahua, Mexico. Due to his skill in medicine, acquired by the necessities of his pioneer life, he was drafted into the service of General Francisco Villa during the latter's revolutionary activities. For the past 20 years Newby has divided his time between timber interests in New Mexico and mining operations in Arizona.

WILLIAM PORRI

WILLIAM PORRI and his wife were killed on July 3 in an automobile accident near Bishop, California. Porri was well known in the mining field, having worked in the western United States, Canada, and Mexico.

He was born October 30, 1889, at St. Louis, Missouri, and received his mining education at the Missouri School of Mines, where he was graduated in 1912 with a B. S. degree in mining engineering. He began his mining career with the Shafter mine in Colorado, and went from there to the American Zinc, Lead and Smelting Company in Missouri. In 1913 Porri joined the staff of the Morenci Branch, Phelps Dodge Corporation, where he remained until the outbreak of the World War in 1917. During the war period he served as construction engineer with the quartermaster corps with headquarters at San Diego, California.

Following the armistice, Porri joined the staff of the Old Dominion Company, Globe, Arizona, as geologist, remaining there until 1923 when he accepted a position as manager of the New Dominion Copper Company, Globe.

In 1924 he went to the Alamos Silver Mining Company, Queriego, Sonora, Mexico, as manager, leaving that position in 1927 to accept a similar one with the Afton Mines, Ltd., in Ontario, Canada. From 1929 to 1934 he was mine methods engineer and mine foreman at the Frood mine of the International Nickel Company in Ontario, Canada.

He was named manager of the Harbud Mines Company at Humboldt, Arizona, in 1934, and in September, 1937, he joined the Catalina Consolidated Copper Company, Oracle, Arizona, as mine superintendent. The following year he went to Sierra City, California, as manager of the Gold Point mine for the Tombstone Development Company. When that property was shut down in the fall of 1938, Porri moved to Los Angeles, where he was making his home at the time of his death. He was returning to his home from a mine inspection trip when the accident occurred.

TWO MEMORIAL SCHOLARSHIPS ANNOUNCED BY U. S. SMELTING

TWO memorial scholarships at the University of Utah have been offered to sons of non-salaried employes of the United States Smelting Refining and Mining Company, according to an announcement by F. S. Mulock, vice-president and general manager of western operations.

The scholarships are to honor the memories of the late Downie D. Muir, Jr., former vice-president in charge of western operations of the smelting company, and Walter Hazen Eardley, late manager of smelters of the company. The scholarships are to cover four years each with an allowance of \$400 a year for each student holder. They are to be available only to high school graduates and will not be available to sons of salaried officials of the smelting company.

Whether these scholarships are to be made a permanent annual custom has not been announced, but it is understood that such is the plan of the company.

METAL MINE LEADERS TO DISCUSS INDUSTRY'S PROBLEMS

UNITED States Senator Key Pittman of Nevada has accepted an invitation to speak at the forthcoming Sixth Annual Metal Mining Convention and Exposition of the American Mining Congress which is to be held at Salt Lake City, August 28 to 31. His subject will be "The Future of Silver." Always an ardent advocate of silver, Senator Pittman led the victorious fight in Congress to secure a higher price for the white metal. Largely through his efforts, backed by the majority of the silver Senators, was the industry successful in achieving the 71.11 cents an ounce statutory price for silver.

Following action of the Senate on the recent monetary bill, Senator Pittman became aware of a serious danger that an unintended tax would be assessed by the Treasury on domestically mined silver delivered to the mints. The Secretary of the Treasury indicated that a 50 per cent "transfer tax" would be assessed on the difference between the world price for silver and the price paid domestic producers by the U. S. government for coinage purposes; this would have reduced the effective price received by the producer to approximately 55 cents, and nullified the benefits of the proposed legislation. Through Senator Pittman's efforts, the bill emerged from conference and was enacted into law containing specific language which eliminates the danger that such a tax will be assessed.

Metal mining men are looking forward with keen interest to his address which will be made at the Monday afternoon session of the convention, August 28.

According to Julian D. Conover, secretary of the American Mining Congress, plans for the program for the metal mining meeting are practically completed. Leaders in the industry will meet in Salt Lake City for a thorough discussion of operating problems and questions dealing with government and with national defense.

Slated for consideration at the meeting are: Strategic Minerals Program; Developing of Domestic Sources of Deficient Minerals; Mineral Resources and World Politics; Future Prospects for the Metals—a symposium on the status and outlook for copper, lead, zinc, iron ore, gold, industrial minerals, and other metals; New Equipment and Improved Practices in Metal Mining; Morenci Pit of Phelps Dodge Corporation; Progress in Milling Practice and Equipment; Contract Systems in Metal Mining; Industrial Relations; Wagner Act and the Mining Industry; Air Hygiene in the Mining Industry; A Critical Review of Occupational Disease Legislation; Mine Ventilation and Dust Control; Problems of Mine Financing; Needs of Primary Mining Ventures; Wage-Hour Act; and Taxation.

Monetary legislation, which has been the focal point of national attention during the past weeks, together with federal taxation as it affects the mining industry, will come in for thorough discussion at the meeting. Leaders in government and industry are to speak on these subjects.

Keen interest is being evidenced throughout the metal mining states over the program for the meeting, and it is expected that more than 2,000 metal mining men will be in Salt Lake City for the convention sessions. In conjunction with these sessions, an exposition of mining machinery, equipment, and supplies, participated in by a hundred leading manufacturers, will be held. All types of equipment necessary to modern mining and milling operations will be displayed.

SAFETY MEETINGS NOT TO CONSTITUTE WORKING TIME

TIME voluntarily spent in attending safety meetings after working hours and as a part of a general safety program sponsored or approved by a governmental agency, such as the Bureau of Mines, or by a recognized independent organization engaged primarily in safety information dissemination, will not, as a general rule, be considered as working time under the Fair Labor Standards Act, according to Administrator Elmer F. Andrews of the Wage-and-Hour Division, U. S. Department of Labor. A previous interpretation had stated that time spent in attending meetings and lectures, sponsored in any way by the employer, should be considered time worked if the meetings related to the employer's work.

In order to clarify the situation as related to the mining industry, Andrews has made public a copy of a letter written to Dan Harrington, chief of the health and safety branch, U. S. Bureau of Mines. In this letter he states:

"In our opinion safety meetings which take place after working hours and are conducted as part of a general safety program which is sponsored or approved by a governmental agency or by any recognized independent organization engaged primarily in disseminating safety information, will not ordinarily be directly 'related to the employe's work' and, if attendance is voluntary, will not be considered as 'hours worked.' Different considerations,

as indicated in Interpretative Bulletin No. 13, apply to mine rescue. The foregoing opinion, although not binding upon the courts, will guide the administrator in carrying out his enforcement duties under the Act."

The bulletin referred to specifically stated that mine-rescue study and preparation, fire prevention and control, are to be considered as part of working time, whether or not such time is voluntary by employes.

COOPERATIVE PLACER PROJECT TO BE DELAYED

THE MINING Research Bureau of Pasadena, California, has announced that some delay will be experienced in completing arrangements for the cooperative gold placer project which has been under investigation for nearly a year.

According to the announcement, engineers of the bureau have been unable to locate sufficient suitable placer ground to justify the installation of operating machinery and equipment. The paramount requisite for a successful project is that a large acreage of sufficiently productive ground be available to permit the expenditure contemplated. To date, the lack of sufficient placer ground has retarded the project, and unless more profitable looking acreage is found, the project will not be launched.

The bureau has been authorized to continue investigations and if any locations of dry or wet placer ground are found which indicate satisfactory recoveries, with a

MILL LINER SUPREMACY DOESN'T JUST HAPPEN

Twenty years' experience in the manufacture of mill liners and extensive study of the requirements of this service have resulted in Alloy-Manganese—the longest wearing metal on the market for this purpose. Our equipment for melting and fabrication is most modern and complete, providing ample production capacity.

ALLOY STEEL & METALS CO.

1862 E. 55th ST. . . LOS ANGELES, CALIF

Manufacturers of PACIFIC JAW CRUSHERS and Alloy-Manganese CRUSHER JAWS, HAND WINCHES, PACIFIC Rock Drill Bit GRINDERS, GRATES, SCOOP LIPS and other WEARING PARTS



It's Knowing How and Doing It

The Sampling Mill by Fisher Lane



... No phase of American life today is without fear. Big business, little business; huge corporate industry, one-man industry; manufacturing, mining; the professions, technical and non-technical... even the shovel-leaners of WPA or the bench-warmers of Direct Relief... collectively prove by behavior a state of mind akin to that of a chicken seeing the hen-hawk's shadow flit across the barnyard. Fear dominates all of us. Fear founded on facts, not silly and unreasonable panic-fear.

... Current national bank reports reflect that fear in the magnitude of mounting deposits—deposits of money that should be on the job working for a decent wage, instead of lurking in limbo, looking longingly over its shoulder or shaking with jumpy jitters.

... We fear Hitler's government; fear Mussolini's government; fear Stalin's government; fear the army-navy-ruled Nippon government—fear them to a degree that impelled Congress to pass the president's "MUST" airplane-appropriation bill, \$356,000,000, without batting an eye.

... We fear... horrible dicta!... our own American New Deal government, with its visibly mounting tendencies towards totalitarianism manifest in fatuous fussing with Business and Industry.

... Agriculture, sister basic industry of our own, fears the weird ideas and methods of Henry Wallace—and that fear has reflex effects upon our own, by keeping farmers' savings rotting in tightwad banks when they should be invested in productive industry.

... Late in March Jesse Jones, RFC chairman, wrote all state and national bank officers and directors asking them to liberalize their terms on loans to industry—knowing when he wrote it that the government-ridden bankers all want to get cash out on the job, but hang back from so doing through fear. That was really why Jesse dictated that letter.

... Across the Atlantic fear is far more intense, of course. One very visible effect is the gargantuan glut of gold pouring into the port of New York from Europe, chased hither by that fear (fear founded on such playful tricks as the trucking by Hitler from Praha to Berlin of raped Czech's big gold reserve). The gold, of course, is headed not into banks, for the use and benefit of American industry and the uplifting of public confidence, but into the cellar at Fort Knox, Kentucky, and a life of utter uselessness!

... Executive heads of mining corporations owning splendid properties, with favorable reports of responsible engineers which have brought them approval of the SEC authorities at Washington, are scratching for legitimate operating capital in eastern investing centers traditionally fond of mine investments. No soap. Fear keeps the capital concealed.

... Experienced engineers polish swivel-chair seats waiting for commissions to examine properties, but mine owners wait... in fear, while the engineers, too, reflect the fear.

... What can we do about it? Answer: EXACTLY NOTHING!

reasonable initial cash outlay, the project will be continued under the cooperative plan.

James E. Sellers, consulting engineer, has been requested to make a number of inspections of placer properties during the summer. Anyone having wet or dry placer properties which will average 50 cents a yard may write to the bureau at Box 213, Pasadena. The bureau will arrange for a cooperative working plan on a royalty basis, provided the acreage is sufficient to accommodate 500 or more workers. Property leased for the project will be completely equipped by the bureau.

GOLD AND SILVER RECEIPTS BREAK DENVER MINT RECORDS

THE TOTAL amount of silver received at the Denver mint during the month of June totaled 1,754,777 ounces, worth \$1,133,899, which exceeds by far any other record since the opening of the mint in September, 1905. Especially large shipments came from silver producers in Idaho, who usually ship to the San Francisco mint, but were anxious to have the silver in the mint before the end of the month. For the first half of 1939 the Denver mint received silver valued at \$1,362,249.63, as compared with \$277,286.12 worth of silver in the first half of 1938.

Gold consignments for the fiscal year ending June 30, 1939, amounted to \$63,124,305 and compared with \$60,431,195 for the previous fiscal year. During June of the current year the amount of gold received by the mint amounted to \$4,186,952, against \$3,803,306 received in June of 1938. South Dakota ranks first among the states sending gold to the Denver mint, shipping close to \$20,000,000 annually. Colorado ranks second with about \$13,000,000.

At present the Denver mint is coining pennies, nickels, dimes, quarters, and half dollars. Silver dollar coinage ceased in 1934.

ARIZONA'S MINING INDUSTRY AND SCENIC SPOTS TO BE FILMED

A MOTION picture, covering "Scenic Arizona and Its Mining Industry," is to be made by the Atlas Educational Film Company, Oak Park, Illinois, under the direction of the U. S. Bureau of Mines. The film will be financed by one of the large Arizona copper companies. The Atlas organization recently completed an eight-reel "Story of Copper" covering the mining, smelting, refining, and fabrication of the red metal at Phelps Dodge Corporation properties.

The film will include copper mining; lead and zinc mining at Ruby and in Mohave County; gold placers in Yavapai County; underground gold mining and milling in Yavapai and Mohave counties; molybdenum mining at Mammoth; tungsten mining at Dragoon; and silver mining at Duncan and Tombstone.

Mining of nonmetallic ores will include gypsum at Douglas, onyx at Phoenix and Mayer, turquoise at Kingman, copper sulphate at Flagstaff, asbestos at Chrysolite,

barites at Wenden, coal at Showlow, oil at Buckeye, and sodium sulphate at Camp Verde.

As a future possibility of the state, the Artillery Peak manganese deposit will be pictured.

Throughout the film will be interspersed scenes of the Chiricahua Mountains, Apache Trail, Roosevelt Dam, cliff dwellings, Tonto Natural Bridge, Montezuma Castle, Grand Canyon, Boulder Dam, Meteor Crater, Petrified Forest, Painted Desert, and other scenic attractions.

COORDINATION OF SAFETY AND EMPLOYMENT PROGRAMS

THE NECESSITY of the mine management taking an active part in the promotion of safety is stressed in a paper on "Coordination of Safety and Employment," by G. W. Grove, mining engineer, recently published by the Bureau of Mines, Department of the Interior. The paper also emphasizes the responsibility of the mine management in providing basically safe working conditions, a definite safety program, and adequate safety rules.

The cooperation of employes in the promotion of safety is also emphasized. Attention is invited to the need for more careful examination as to the capabilities, fitness—physical and otherwise—of new employes, the importance of adequate and workable safety rules, and instruction of employes regarding such rules. Particular emphasis is placed on the necessity of training and educating employes by officials, or by means of suitable practical safety courses, during the early stages of employment and when changing employes from one type of work to another.

Copies of Information Circular 7079, "Coordination of Safety and Employment," may be obtained from the Bureau of Mines, Washington, D. C.

SAN JUAN AREA WILL NOT LOSE RIO GRANDE SOUTHERN

VICTORY was claimed by mine operators in the San Juan area when the announcement was made that the Rio Grande Southern railroad would not abandon that portion of its tracks between Rico and Vance Junction, a distance of 28 miles. The line serves the mine regions of western La Plata, all of Montezuma, Dolores, and San Miguel counties. It starts at Durango and goes through Mancos, Dolores, Rico, Telluride, and on to Ridgeway. From that point the Denver and Rio Grande Western railroad, on narrow gauge tracks, is the carrier to Montrose, where standard gauge tracks are used.

FAMOUS OLD ALASKAN MINE WILL BE ABANDONED

THE FAMOUS old Chichagoff gold mine at Juneau, Alaska, which has produced many fortunes during its operating life of nearly 40 years, will be abandoned and the works flooded in the near future. Low-grade ore and expense of working at great depths are reasons given for shutting down the mine which has operated almost continuously since the early 1900's.

worked by Hugh Hubbard, owner. The shaft is being retimbered at present and four men are working.

Installation of a 25-ton amalgamation and cyanide plant has been completed at the Gowan mine near Payson, Arizona, and work is to begin at once on the milling of ore dumps together with ore from the mine. Five men are employed under the direction of Jess W. Shields, Payson. The mine is under lease from the Verde Falls Gold Mining Company.

A hoist and compressor are being installed at the Zulu gold mine, Payson, Arizona, preparatory to active mining operations. A crew of five men is employed in development work and installation of a mill is planned at a later date. The mine is owned by Walter L. Lovelady, Box 113, Payson, and is under lease to Dr. W. E. Williams of Hollywood, California.

A crew of men is engaged in development work at the Devil's Gulch barite property near Mariposa, California, owned by



the California Barite Corporation, Ltd., 1141 Subway Terminal Building, Los Angeles, California. The mine is under option to E. S. McCurdy and associates, 10 Penthouse, Mills Building,

San Francisco, California. For the past three years seasonal development has been carried on under the supervision of Merrill A. Wright, 2807 Piedmont Street, Berkeley, California. Ore has been opened for a length of 400 feet and a depth of 200 feet. Thickness of the vein varies from three to 15 feet and the ore is white in color. A short lens of high-grade witherite, 12 feet in thickness, was encountered in the course of development.

J. P. Kennedy of Alcot Street, Los Angeles, California, has leased the gold claims located on the Walter Joy property near Vallicita, California, and is preparing to develop the property. He has gone to Los Angeles but will return to Vallicita at an early date to begin preliminary work. A water supply is available and the P. G. and E. power line runs by the property. The mine is near the Mother Lode highway.

A new shaft has been started at the Nancy Hanks mine near Randsburg, California, and installation of the hoist is under way.

A crew of eight men is employed at the Double Eagle and Last Chance group of claims located on Soledad Mountain near Mojave, California. The property is owned by Big Jim Mines, Inc., A. G. Keating, general manager, Merced Falls, California.

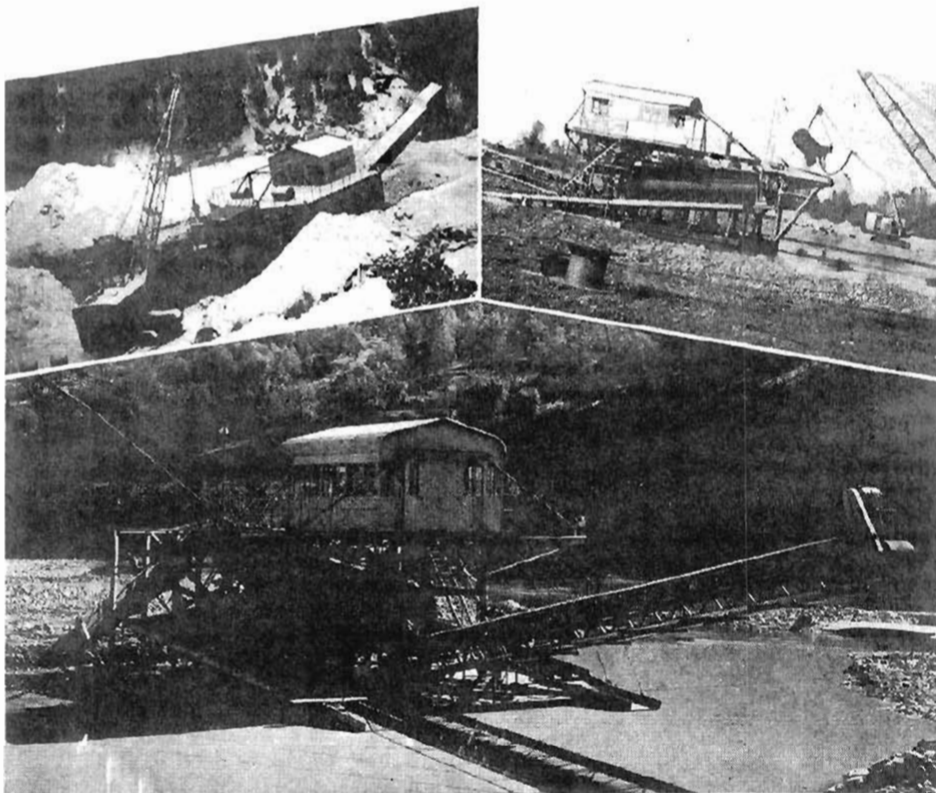
F. C. Hyers and a small crew of men are engaged in reopening the Jim mine near Graniteville, California, and returns from assays on ore previously stored for milling are said to have run as high as \$398 per ton on high-grade material. At present the crew is engaged in installing a 25-ton Wheeler ball mill and ore previously stored will be milled before work is continued in the shaft. Assays from one stope averaged \$57 a ton.

The Alaska mine near Pike, California, has been optioned by General Miller, and it is understood that a contract has been made with Byron Jackson Company for installation of pumps to unwater the shaft. Lessees working above the water line are reported to have made satisfactory profits. The old shaft is about 500 feet deep with an additional winze sunk from the east drift on the 500-foot level. The property has been operated from time to time since the 1880's but water difficulties have halted operations in almost every instance. It has been suggested that a drain tunnel be driven a distance of two miles from the Delhi property in order to do away with pumping.

A crew of men is employed at the Oro Fino group near Garden Valley, California, in opening the mine workings and in making ore tests. J. H. Pearson is superintendent and John Barthoff is foreman. The Oro Fino, comprising 40 acres, is located near the Veerkamp property and is owned by S. W. Collins of Garden Valley. W. R. Coleridge Beadon, Georgetown Hotel, Georgetown, California, who recently optioned the property, is on the ground to check results and to outline future work.

Work is to begin at once with a small crew of men at the Homer V. Madden property near Placerville, California. The property, comprising 30 acres, is under

BODINSON - BUILT DRAGLINE DREDGES



Wherever Bodinson Dragline Dredges are at work, the owners are obtaining maximum recoveries at minimum costs—and that spells PROFIT. This is due to the individual designing and correct engineering of every Bodinson Dredge to suit the particular conditions under which it will operate, and the experience in the designing and building of nearly 100 gold recovery plants, both for floating and dry bank operation.

Send for free copy of catalog "Dragline Gold Dredges"

BODINSON
MANUFACTURING COMPANY
2401 BAYSHORE BLVD. SAN FRANCISCO

World's Largest Builders of Dragline Gold Dredges

lease to H. A. Wootton, 236 Richmond Avenue, Buffalo, New York, and associates. The present shaft is down 180 feet, and 200 feet of drifting have been done. It is estimated that there are 1,200 feet of the Gray Channel available on the property, averaging 150 to 200 feet in width. The material is all free and can be mined by the drift method and treated by means of sluice boxes and Hungarian riffles. A hoist, air blowers, blacksmith shop, and other necessary equipment are on the property. For the time being work will be on a one-shift basis. According to Madden, about 14 feet of channel material lie between the lava cap and bedrock. The pay streak is reported to be approximately 6½ feet in depth.

Assembling of machinery has been started at the old Harrison mercury mine in Morgan Valley near Lower Lake, California, and installation of a furnace and retorts is scheduled to begin soon. The property was recently reopened after lying idle for several years and substantial deposits of commercial ore are reported to be available for immediate extraction. The mine is owned by Verne and Vince Harrison.

W. M. C. O'Conner, who holds the Foote and Thompson group of gold properties near Mokelumne Hill, California, under option, is completing arrangements for extensive work at the property. Commercial ore is said to be exposed in old workings and prospecting of adjacent territory is planned.

George and Andy Carey are operating the Fisher Maiden quartz mine on Mt. Oro 14 miles east of Nevada City, California. The veins average from two to 15 feet in width and assays up to \$25 per ton have been returned on samples taken from the veins.

The Innis Dredging Company, operating on Deer Creek west of Nevada City, California, is employing a crew of 17 men. The plant is handling approximately 70,000 yards of gravel monthly. A. B. Innis is in charge at the property.

Davidson Brothers of Roseville, California, have equipped their holdings in the Deadwood district with a reservoir and pipe line, preparatory to hydraulicking operations. A large yardage of profitable gravel



is said to be available for treatment by the hydraulic method.

A trommel screen 66 inches by 35 feet is being installed at the property being dredged by Logtown Placers near El Dorado, California. The company controls large deposits of gravel in the El Dorado field and also operates a dredge near Slough House.

Rex Fields, Emil Pardi, and E. C. Cheek have entered into a partnership with a view to developing the Rich Gulch mine near Georgetown, California. The property is owned by Cheek and comprises 28 acres. Plans are being pushed for deepening of a 20-foot winze in the tunnel to a depth of approximately 75 feet. The property was relinquished to Cheek in September, 1938, by the Lode Development Company, after considerable development work had been done. The company took the mine over under lease in the fall of 1937.

The William Poor mine near Kelsey, California, has been taken over by the Lone Star Gold Mines, Inc., and a crew of four men is engaged in installing machinery preparatory to sinking a 200-foot shaft. W. H. Hall is directing operations.

High-grade manganese is reported to have been developed in surface workings of the Last Chance property located between Bridgeport and Mono Lake, California. The mine is being operated by L. A. Murphy of Reno, Nevada. Ore is said to sample 54 to 63 per cent manganese with less than 3 per cent of silica showing. Croppings are about four feet wide but the extent of the deposit has not yet been determined.

Mining operations are under way at the long-abandoned Buclimo mine in the Los Burros mining district southwest of King City, California. Five men are working the property under lease and are taking out about 25 tons of gold quartz ore weekly, which is shipped to Oakland. The mine is held under lease by a Los Angeles group and William Bane is directing work.

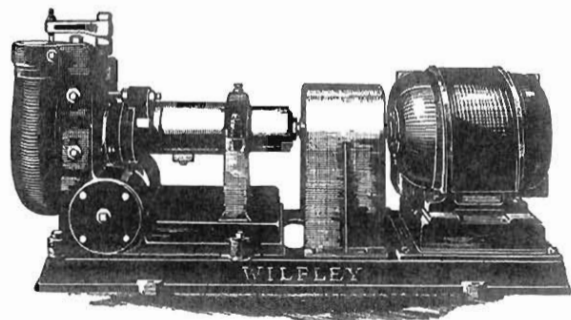
The Red Banks mine near Bagby, California, is reported to be producing about 75 tons of gold ore daily, which is treated in the new 125-ton mill placed in operation early this year. A crew of 20 men is employed at the mine, which is under development by Fred W. Draper. Sufficient ore is said to be in sight to assure a long period of profitable activity.

Improved character of ore mined and stability of operating expenses were responsible for increased revenues during June for the Alaska Juneau Gold Mining Company, P. R. Bradley, president, 1022 Crocker Building, San Francisco, California. The company reported an estimated profit of \$133,900 before depreciation, depletion, and income taxes for the month, compared with \$102,500 in May and \$189,300 in June of last year. June results brought the total estimated profit for the first six months of the year to \$561,400 before depreciation, depletion, and income taxes, as compared with \$1,002,500 in the like period of 1938. Although tonnage mined and trammed to the mill decreased from 409,450 in May to 388,480 in June, the company recovered 11,286 fine ounces of gold last month, as against 10,757 the preceding month. Total revenue per ton was \$1.03 in June, compared with 93 cents in May. Expenses in both months were stabilized at 69 cents a ton.

The dredging outfit operated by C. E. Grewell on Coyote Creek near Melones, California, has been moved to the Manuel gravel beds near the Vallicita Western gravel mine, where it will be set up for operation. The new location is about two miles from Angels Camp, California.

The Hard Times mine, owned by J. T. McCullough, Michigan Bar, California, is being developed under option. Several men are employed in constructing a road over which supplies and equipment may be hauled to the property. The mine is located in Duncan Canyon on the Middle Fork of the American River.

The Epley mine, comprising four patented claims, is being reopened by the Twiford Corporation under the management of L. F. S. Holland, Placerville, California. Holland holds under personal lease the Pacific, Oregon, and Harmon groups. It is expected that the Oregon and Albright mines will be reopened in the near future.



Write for Complete Details

A. R. WILFLEY & SONS, Inc.

DENVER, COLORADO

New York Office: 1775 Broadway, New York, N. Y.

Save Pumping Costs

Stuffing box, stuffing, gland water, shaft wear—ALL these UNCERTAIN elements are ELIMINATED in the WILFLEY pump. That is why the Wilfley handles the HARDEST jobs as if they were EASY—running continuously for long periods without attention. Use WILFLEY pumps in YOUR plant if you want to save pumping costs.

WILFLEY
centrifugal SAND PUMPS

and resumption of work at the Pacific is also under consideration.

Work is progressing on installation of the 50-ton flotation plant at the Gum Tree mine, Mojave, California, under the direction of H. E. Robinson, lessee. Included in equipment for the new mill are a large jaw crusher; Allis-Chalmers cone crusher; automatic sampler; four by eight-foot Marcy rod mill; Pan-American jig; 54-inch by 16-foot Dorr duplex classifier; Forrester conditioner bin; and 100-ton Forrester flotation machine. At a later date a cyanide plant may be added. The new plant, which is to be completed during July, will be electrically powered throughout, power to be furnished by a 125-horsepower, two-cylinder Diesel engine connected to a 100 kv.-a. generator.

The milling plant at the **Pride of Mojave Mining Corporation**, Mojave, California, has been enlarged and the company is preparing to sink another shaft on its property. Work at the mine is directed by James J. Murray.

The **Tungsten Corporation of California**, R. P. Johnson, president and general manager, 811 West Seventh Street, Los Angeles, California, has made application to the division of water resources for a permit to divert 60 gallons per minute from Yellow Jacket Spring for mining. Estimated cost is \$10,000.

Application for several water permits on the Yuba River and its tributaries has been filed with the division of water re-

sources by **Ridge Mines, Inc.**, 2314 Shell Building, San Francisco, for mining and domestic purposes.

During the past year the **Bradley-Turner Mines, Inc.**, has proven 9,600,000 cubic yards of gravel averaging 40 cents per yard, according to Henry Clay, secretary-treasurer and general manager, Camptonville, California. The property is located six miles northeast of Camptonville and comprises 13 placer claims and 160 acres of patented ground known as the Pleasant View ground and the Mt. Alto claims. Installation of 4,500 feet of 10-inch pipe is in progress to supply water for ground sluicing and a dragline operation.

Equipment installed recently at the Minnie K mine at Gold Lake near Sierra City, California, includes a 25-ton Huntington mill, Gardner-Denver compressor, Caterpillar tractor, Fisher geophysical equipment, and an aerial tram, according to Fred M. Irwin. Joe H. Harper is master mechanic.

A 12-foot by 48-inch trommel, gravel bins, chutes, and 240 feet of sluices fitted with Hungarian riffles have been installed at the Bald Mountain mine near Forest, California. The property was taken over under lease recently by M. F. Lusk, Elton O. Carvin, and Ora and Ray Huggins. The underground crew is now drifting in gravel.

The Phoenix mine located near Sierra City, California, is reported to have been leased to Homer Black, 1264 Justin Avenue, Glendale, California, former Nevada mining engineer.

A road has been built to the **Oro Flame** mine, Alleghany, California, a bunkhouse has been built, and a compressor installed. Work is now under way on the sinking of a 200-foot shaft with a view to cutting the Ireland vein. Operations are directed by William Morrison. The mine, which is owned by J. J. Connell of Alleghany, was taken over recently by San Francisco interests.

R. W. Isbell, owner and operator of the **Bull Moose** mine located four miles east of Forest, California, has completed 450 feet of bedrock tunnel and estimates that he has approximately 190 feet to go before raising into the gravel. A new compressor has been installed at the property. Several years have been spent in exploration and development work.

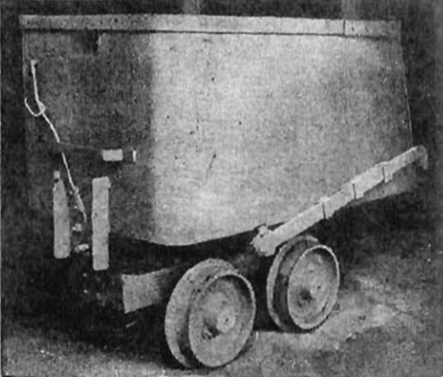
A larger Diesel engine will be installed at **Union-Keystone Consolidated Placer Mines**, Gibsonville via La Porte, California, in order to better handle the flow of underground water. A crew of seven men is employed at the property under the direction of Parker H. Mason, superintendent.

Work is in progress on construction of the new 250-ton sand slime cyanide plant at the **Greenhorn** mine, Redding, California, for the **Willow Creek Mines, Inc.**, A. O. Stewart and Walter Lyman Brown, 206 Sansome Street, San Francisco, California. Operations are directed by Corvin L. Cooper, general superintendent. The new plant is being installed by the Western-Knapp Engineering Company, 760 Folsom Street, San Francisco, California. The firm has

ALWAYS DEPENDABLE -
ALL WAYS THE BEST

HENDY

MINE CARS



In different types and sizes.
BUILT TO ENDURE
COMPLETE Equipment for Mines and Mills.

See us at the EXPOSITION—SAN FRANCISCO
Mines, Metals and Machinery Building

Send for Bulletins & Information — Dept. A

JOSHUA HENDY IRON WORKS

Address Sales Office: 206 Sansome St., San Francisco

WORTHINGTON

EQUIPMENT FOR MINING

STATIONARY AIR COMPRESSORS	DIESEL ENGINES
MINE CAR AIR COMPRESSORS	GAS ENGINES
PORTABLE AIR COMPRESSORS	STEAM TURBINES
CENTRIFUGAL PUMPS	V-BELT DRIVES
ROTARY PUMPS	REDUCING AND INCREASING GEARS
POWER PUMPS	
STEAM PUMPS	
BORE HOLE PUMPS	
DEWATERING PUMPS	
DRAINAGE PUMPS	
COFFERDAM PUMPS	
STATION PUMPS	
SINKING PUMPS	
GATHERING PUMPS	
ROCK HAMMERS	
SELF-FEEDING DRIFTERS	
SCREW-FEEDING DRIFTERS	
WAGON DRILLS	
BLOCK HOLERS	
SELF-ROTATING STOPERS	
HAND-ROTATING STOPERS	
SHAFT SINKERS	
ROCK DRILL ACCESSORIES	
FORGING FURNACES FOR DRILL STEEL	
AUTOMATIC HEAT TREATING MACHINES FOR DRILL STEEL	

Correct engineering
High grade materials
Careful workmanship

Send for literature

Offices and Dealers in Principal Cities

CD8-10B

WORTHINGTON PUMP AND MACHINERY CORPORATION
General Offices: HARRISON, NEW JERSEY

been authorized by the state division of water resources to divert water from three creeks in Shasta County for mining purposes. Estimated cost of the diversions is \$9,000.

Placer Properties, Inc., H. G. Kumle, president, Oakdale, California, has started dredging operations on property recently leased near Oakdale.

The new mill at the property of the **Mariposa-Washington Mining Company**, E. Bradford Newcomb, manager, Hornitos, California, has been completed and placed in operation.

Rupley Brothers of Placerville, California, and Jeff Daly, formerly of El Dorado, California, are engaged in exploration and development work at the old Crane's Gulch mine in the Garden Valley mining district. The property has been equipped with a compressor, an electric hoist, and other machinery, and a shaft is now down to the 80-foot level. The property was mined by hydraulic methods in the early days.

John T. Thorndyke, 4103 Rosewood Avenue, Los Angeles, California, has taken a long-term lease on a 25-ton milling plant located at Sageland in the Kelso Valley, owned by Karl Struss. Thorndyke has also optioned the St. John mine, which he plans to unwater and place on production. Custom ore will be accepted at the mill which is located 44 miles from Randsburg, California.

A new Diesel compressor has been installed at the Ruth mine located 14 miles north of Trona, California, in the Argus mining district, and arrangements are being made for installation of a Diesel generator to supply power and light for the mine and for homes in the camp. A crew of 27 men is employed at the property, and an additional five men are employed at the Davenport mine, which is under the same management. Additional houses are being built at the property to accommodate the increased personnel. The mill is handling about 70 tons of ore daily, and the mill heads are said to run from \$5 to \$8. The properties are operated by Burton Brothers, Rosamond, California, in association with Nelson Sweetser and George Wyman, Trona. N. P. Brown is superintendent at the Ruth mine; Jerry Loper is general foreman; and W. E. Loper is mine foreman. Louis Warnken is assayer.

Yuba Consolidated Gold Fields, Ltd., 351 California Street, San Francisco, California, and subsidiary reported a consolidated net profit of \$1,101,476 for the fiscal year ended February 28, 1939, after charges, including depreciation, depletion, income taxes, exploration and research charges, and minority interest in the subsidiary company's earnings. This is equal to 48 cents a share on the 2,300,000 shares of capital stock outstanding in public hands, and compares with a net profit of \$1,392,681 or 61 cents a share for the year ended February 28, 1938. The company handled 43,881,544 cubic yards of gravel, or 11.84 per cent more than was handled in the previous fiscal year. Gold recovery was 128,981 fine ounces, or 2.73 per cent more than the preceding year. Average recovery was 10.32 cents a cubic yard and average direct mining expense

totaled 4.08 cents a yard, compared with 11.19 cents and 3.98 cents respectively for the preceding year. The company reported 12 dredges in operation as of February 28, 1939. Five of these were in the Hammon-ton field, where the new No. 20 was placed in April of 1939; two each in the Merced, Biggs, and Capital fields; and one in the Callahan field. The company removed one dredge from service in the Capital field and this boat is scheduled to be dismantled for removal to the Biggs field, which has recently been enlarged through acquisition of additional property. Dividends paid last year amounted to 45 cents a share, which included three quarterly payments of 10 cents a share and a year-end payment of 15 cents. In the 1938 fiscal year dividends totaled 61 cents. Stanley M. Bolster is president of the company, and F. C. Van Deirse is vice-president in charge of operations.

A program of extensive development is planned by new operators of the **Bandarito** mine which is located in the Red Cloud district 10 miles east of Coulterville, California. Additional machinery and a mill of larger capacity are proposed. The mine is held under lease by J. E. Brown, G. A. Ogden, W. J. Beatty, and O. E. Crouse, who have completed an agreement for sale of their lease to a San Francisco syndicate. Brown is expected to be superintendent under the new management.

Development work is progressing rapidly at the **Big Sandy** and **Gray Eagle** mines,

Kelsey, California, under the direction of Earl Cooper, superintendent. Electric power has been made available and the pumping plant, mill, and domestic lights have been connected. An office building and living quarters have been completed for the superintendent. Lessees are working on both properties and mining operations are also progressing in drifts and crosscuts from the main shaft on the 120-foot level.

A 50-ton shipment of ore has been made from the **Yellowstone** mine to the Pine Tree mill for a test run. If results are satisfactory it is planned to mill some 2,000 tons of ore now on the dump. The mine is located on Bear Valley Mountain one mile west of Bear Valley, California, and is being operated by J. W. Warford and associates.

A newly elected board of directors of the **Mother Lode Gold Mines Company**, Drytown, California, is making preparations for reopening the property. At a recent meeting arrangements were made to put a force of men to work immediately under the direction of E. V. Leiby, superintendent. It is planned to build flumes and reconstruct the headframe preparatory to unwatering the shaft and workings. Bids are being received for reconstruction of the power line and other equipment and as soon as power is available work will be speeded up.

C. W. Jones, formerly associated with the **Western Graphite Company** at Lake

Control this major expense

CRUSHING	MILL COST SHEET		GRINDING	FLOTATION	THICKENING
AGITATION	FILTERING	TAILINGS	LABOR		
SUPERINTENDENT					

with **COLORADO Forged Steel GRINDING BALLS**

The Colorado Fuel and Iron Corporation
General Offices: Denver, Colo. Steel Works: Pueblo, Colo.



Hughes, is now operating the Mineral Reduction Company plant at Benton, California. The plant includes a two-stage crusher, ball mill, classifier, and flotation cells. A complete cyanide unit is also being installed. The mill has a rated capacity of 75 to 100 tons in 24 hours. A complete assay and testing laboratory is also operated in connection with the plant. In addition to custom milling, Jones is operating several properties in the district under lease.

Frank P. Kelly, secretary, has announced that affairs of the Vera Mines Corporation, 427 East Anapamu Street, Santa Barbara, California, are being closed, and notice of a discontinuance of business has been sent to offices of the Securities and Exchange Commission. The corporation has lost its machinery on a chattel mortgage foreclosure, it has defaulted in lease payments, and deficiency judgments have been obtained against it for other obligations which it has been unable to meet, according to Kelly. The property of the corporation, located in Shasta County, has been taken over by E. L. Spencer, Fourth Floor, Benjamin Franklin Insurance Building, Santa Barbara, who is developing it in connection with other mining property which he holds.

Sinking of the Morning Star shaft of the Champion Mines Company from the 425 to the 575-foot level is reported to have been completed under contract by John Conrad of Cripple Creek, Colorado. Company holdings include the Morning Star claim on Bull Hill at Cripple Creek and a block of adjoining claims. Jesse Simmons, 1824 Curtis Street, Denver, is president. A station has been cut in the new two-compartment shaft at the 575-foot level and a crosscut will be run about 220 feet. A crew of eight men is employed and only development work is being done at this time.

The Cobalt Gold Mining Company, Henry J. Von Wyl, 2026 Ivanhoe Street, Denver, Colorado, president, recently completed 2,518 feet of diamond drilling, comprising a total of 16 holes. This work is stated to have proved the presence of nickel ore to a depth of 100 feet below the lower tunnel level, or 300 feet below the surface. J. H. Rodgers, 420 Security Building, Denver, has recommended further diamond drilling to prove the ore to a depth of 500 feet and the driving of a crosscut tunnel to further open the ground at 500 feet. With this in mind the company plans 3,000 feet of drilling and 100 feet of tunnelling. The company, Ward Yeager of Gold Hill, general manager and purchasing agent, owns its property at Gold Hill. Values are in nickel, cobalt, copper, gold, and silver.

Installation of a small mill at the Bessie G. mine is planned by the Chicago interests who are backing the operation. High-grade gold ore has been opened in the mine and extensive development is scheduled. The property, located at Durango, Colorado, is held under lease from H. H. Jeffrey of Durango, with Fay Stewart of Durango in charge.

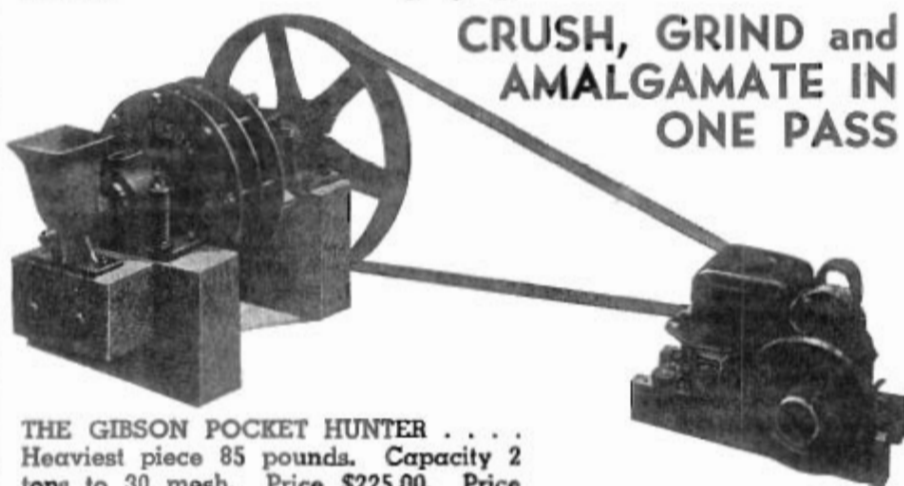
SAVES GOLD OTHERWISE LOST



The Gibson Impact Amalgamator

Built in sizes from 25 tons to 2000 tons capacity

Repeat orders coming in from all parts of the world are positive proof of the efficiency of the Gibson Impact Amalgamator in saving the fine gold, amalgam and mercury that escape from the other amalgamating devices.



CRUSH, GRIND and AMALGAMATE IN ONE PASS

THE GIBSON POCKET HUNTER
Heaviest piece 85 pounds. Capacity 2 tons to 30 mesh. Price \$225.00. Price with belting and 1½ h.p. engine \$290.00.

The Pocket Hunter will crush two-inch material, grind and amalgamate in one pass. The wearing parts of the mill are built of manganese steel and the balance of heat-treated chrome-nickel steel. The mill is built for mule-back transportation and is guaranteed unbreakable. Will be taken back in exchange for 10-ton mill any time inside of one year. Never before has such value been offered to the mining public. Also built in 5, 10, 12, 25, 50, and 100-ton capacities, which will handle FOUR, SIX, and EIGHT INCH material without a rock breaker.

Write for catalogue describing Gibson Counter Balanced Rod and Ball Mills, Prospectors' Friend Mills, Flotation Cells, Amalgamators, Concentrators, Rock Breakers, Ore Feeders, Mercury Feeders, Oil Feeders, Retorts, etc.

W. W. GIBSON

1801 Webster Street

Alameda, California

See Our Exhibit at the Mines, Metals and Machinery Building . . . Golden Gate International Exposition



PLACER MINING DREDGES

GOLD—PLATINUM—TIN

Yuba Manufacturing Co.

351 CALIFORNIA ST., SAN FRANCISCO
Cables — Yubaman, San Francisco

WESTERN STEEL CASTING CO.

Manufacturers of

● CARBON . . . ALLOY . . . STAINLESS AND MANGANESE STEEL CASTINGS ●

SEATTLE

TACOMA

PORTLAND

**FIRST OF FIVE PAMPHLETS
PUBLISHED BY OREGON BOARD**

SEVENTEEN mining areas in Baker, Union, and Wallowa counties, Oregon, are described in Bulletin No. 14-A, recently published by the Oregon State Department of Geology and Mineral Industries. In this area are over 500 mines and mining prospects.

After a general statement of the geography, geology, and history of each area, there is a description of the properties, giving ownership, location, history, geology, development, and equipment. An index map of the state and another map of the mining areas add to the value of this publication, titled "Oregon Metal Mines Handbook: Northeastern Oregon, East Half." It may be obtained for 50 cents at the head office of the department, 329 South West Oak Street, Portland; at the State Assay Laboratory, Baker; and the State Assay Laboratory, Grants Pass.

This is the first of a series of five separate bulletins, each of which will cover a different portion of the state and will replace the Mines Handbook of the old Oregon mining bureau, issued in 1916 and long out of print.

**CALIFORNIA JOURNAL OF MINES
ISSUE DEVOTED TO INYO COUNTY**

MINERAL resources and ore deposits of Inyo County, California, are featured in the California Journal of Mines and Geology for October, 1938, just issued by the California Department of Natural Resources. Special articles in this number include:

"Mineral Resources of Inyo County," by W. B. Tucker and R. J. Sampson, which describes the mineral prospects and properties, gives a mine map showing the locations of 434 mines and claims, and presents considerable statistical data for the area.

"Geology and Ore Deposits of the Darwin Silver-Lead Mining District, Inyo County, California," by V. C. Kelley. Geologic features as they are related to mineralization are covered, excellently illustrated with sections, geologic maps and aerial photographs.

"Sulphur Deposits of Inyo County, California," by E. D. Lynton, which covers claim maps, geologic map, geology, mineralization, and economic possibilities of the west slope of the Last Chance Range.

There is also included under the title of "Source of Gold Produced in California from 1848 to 1937," an article by H. H. Symons which gives a historical summary of types of mining practiced in California and the results thereof.

**R. P. OLDHAM COMPANY NEW
DISTRIBUTOR FOR BOFORS STEEL**

THE BOFORS Steel Works of Sweden, manufacturers of "SWEBO" drill steel, have recently appointed the R. P. Oldham Company of Los Angeles their exclusive representative for the western United States. The members of the R. P. Oldham Company have been associated in the steel business on the west coast for the past 15 years. Bofors, the largest industrial concern in northern Europe, have, according to some historians, been engaged in the manufacture of iron since ancient times but the oldest written documents about the estate of Bo (the Bofors of today) is dated 1584.

For 355 years Bofors have been marketing their products in every principal country of the world except the United States, and only recently, due to an increase in capacity, have made their products available to this country. These products are known the world over for their high quality and include such articles as high speed steels, forgings and steel castings, tool and alloy steels, special steels for construction purposes and drill steel.

Besides the traditionally pure Swedish ore and the charcoal used in the manufacture, "SWEBO" gets its characteristics of longevity, cutting capacity, and easy heat treatment from the Gordon-Bofors patent process, which is held exclusively by the Bofors Steel Works, and which rests on the idea that hollow drill steel breaks from cracks originating at the bore.

Under the Gordon process a large number of small hollow ingots are cast in one single operation. As the solidification starts from the center and from the outside at the same time, there will be no segregation of impurities towards the center of the ingot, and the inside as well as the outside surface portions will therefore have maximum strength.

The small wall thickness (usually less than two inches) of the hollow ingots results in a quick solidification, giving the steel the characteristic texture and easy hardening qualities of the genuine crucible steel.

"SWEBO" drill steel, due to the Gordon process, is unique, in that it has an extremely smooth and very tough lining which is cast in such a manner as to be fused to the drill steel and to become an integral part of it. This lining is tougher than the surrounding steel and gives a "plyboard effect." Years of experience and research in the making of guns and rifles have made Bofors exceptionally qualified to produce the ultra-smooth and fatigue-resisting bores necessary to withstand the terrific strains demanded of modern drill steel.



a complete
guide to the
principal gold-
mining regions
of the world.

**GOLD DEPOSITS
OF THE WORLD**

BY WILLIAM H. EMMONS
Professor of Geology and Mineralogy
University of Minnesota

560 pages, illustrated, \$6.00

Here are descriptions of, and nearly 500 maps which accurately locate, the known gold-mining regions of the world. The maps show the intrusives with which the gold deposits seem generically associated, the rocks older than the intrusives, and the rocks younger than the intrusives.

THE MINING JOURNAL
PHOENIX, ARIZONA

**FLUOROLIGHT
Will Save You Money**

Do you mine scheelite? mercury? or gold and silver which is associated with zinc? If so the FLUOROLIGHT is absolutely essential to you. It is saving many mines thousands of dollars annually.

Lamps sold on Money Back Guarantee basis.

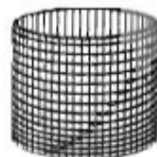
Write for complete information and list of fluorescent minerals at once.

ULTRA-VIOLET PRODUCTS, Inc.
Dept. MJ-4
6158 Santa Monica Boulevard
Los Angeles, California

MINE TANKS

For permanency and low cost. Complete stocks of clear, dry Redwood and Douglas Fir are available.

CYANIDE
PLANTS
AGITATOR
TANKS
COOLING
TOWERS



ZINC
BOXES
THICKEN-
ER TANKS
ORE BINS

Write for prices and complete information

PACIFIC WOOD TANK CORP.
461 Market St. San Francisco, Calif.

EDISON STORAGE BATTERIES

Mr. R. H. Weeks, Jr.
Edison Storage Battery
Supply Co.
1174 Howard Street
San Francisco, California

Mr. F. C. Gibson
Edison Storage Battery
Supply Co.
509 Polson Building
Seattle, Washington

Mr. D. F. O'Donnell
Thomas A. Edison, Inc.
Edison Storage Battery Division
1907 Continental Life Building
St. Louis, Missouri

Mr. W. A. Campbell
Mr. H. A. Woodin
Edison Storage Battery Supply Co.
605 Denver National Bldg.
Denver, Colorado

ANACONDA AND PHELPS DODGE RECEIVE CABLE CONTRACTS

THE Anaconda Wire and Cable Company was awarded two contracts for furnishing copper cable for 260 miles of power line in Arizona. The two contracts, totaling \$477,329, provide for 140 miles of cable for a line from Parker Dam to Phoenix, Arizona, costing \$257,076, and 120 miles for a line from Parker to Blaisdell, near Yuma, Arizona, at a cost of \$220,253.

A \$33,880 contract was awarded to the Phelps Dodge Corporation for anchors, or ground wires, to be used in connection with installation of the two lines.

The contract for erecting the lines was awarded to Dwight Chapin, Jr., of Lincoln, Nebraska. He has 90 days in which to complete the Phoenix line, and 240 days for the Blaisdell line.

ELECTROLYTIC MANGANESE IS SECURED FROM LOW-GRADE ORE

THE SUCCESSFUL solution of the electrolytic manganese problem, which provides a method for the recovery of high-purity metallic manganese from low-grade ores, devised by the United States Bureau of Mines, is recorded in a progress report just published. The installation of the Electrometallurgical Laboratory at Boulder City, Nevada, and installation and activities of the Pullman, Washington, unit, whose investigations cover the metallurgy of manganese, are also described.

The process for the electrolytic production of manganese from its ores as it now stands, and which is regarded as a commercially feasible one, is much different than that described in previous publications. It consists essentially of several steps, which may be briefly outlined as follows:

Roasting the ore in a reducing atmosphere to convert the higher oxides of manganese to manganese oxide. This is done in an externally heated rotating kiln similar to that used in the Caron-Clevenger process.

The roasted ore is then leached with the spent electrolyte from the electrolytic cells. This spent electrolyte contains about 2½ to 3 per cent of sulphuric acid. This insoluble is removed by settling and filtration.

The leach liquor is then treated for the removal of impurities. Iron and arsenic are removed by the addition of manganese dioxide, which occurs as an anode product during electrolysis and agitation with air. The precipitated ferric hydroxides with the occluded arsenic are removed by filtration. The solution is then treated for cobalt and nickel, which have been found to be highly detrimental to the electrolysis of manganese.

After filtration, the solution then passes to the reservoir feeding the electrolytic cell. The cell has lead anodes and stainless-steel starting cathodes separated by canvas diaphragms. It is fed continuously, and the spent anolyte is run off and filtered to remove some manganese dioxide that is formed at the anode. The spent anolyte returns to the leaching circuit.

The current density is approximately 20 amperes per square foot. The energy consumed averages from 3.2 to 3.7 kilowatt-hours per pound of metal.

Analysis of the metal showed 99.63 per cent manganese. The principal impurity was sulphur from the electrolyte. Other impurities were in the third and fourth decimal places. Several hundred pounds of this metal have been produced for experimental purposes.

A general survey relative to the production of magnesium metal, made in co-operation with the State College of Washington, emphasized the importance of investigating the direct reduction of magnesium oxide by carbon and purification of the product by distillation and of studying the production of anhydrous bichloride of magnesium by treating a mixture of magnesium oxide and carbon with chlorine.

As a preliminary step, tests were made on two types of concentration. Selective calcination followed by mulling or heating and then by screening gave good results, as did flotation when certain conditions were maintained. A cyclic process for leaching a calcined ore, precipitating pure magnesium carbonate, and recovering the reagent for reuse in extraction was worked out.

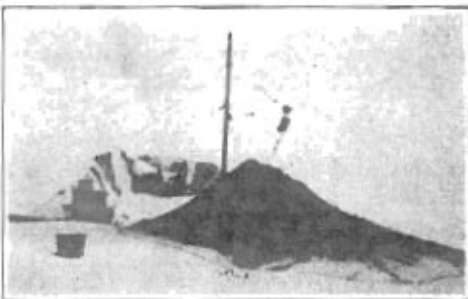
Copies of this paper, designated as "Progress Reports—Metallurgical Division No. 24, Electrometallurgical Investigations," may be obtained from the United States Bureau of Mines, Washington, D. C.

TOPKUK CHIEF RECOVERING GOLD FROM BERING SEA SANDS

A METHOD for the recovery of gold-bearing sands and gravels from the bed of the Bering Sea has been devised by the Topkuk Chief Mining Company at Bluff, Alaska. Mining operations there are carried on despite the arctic cold and blizzards, recovering the sands that lie nearly 1,000 feet from the beach under the thick ice of Bering Sea.

A special steam thawing device, invented by Joseph M. Crabtree, is used to cut the ice into five-ton pieces. These huge blocks of ice are pulled from the sea by means of an Isaacson track-dozer which then pushes them farther out where the ice is piled by the hundreds of tons.

An anchor, constructed of heavy timbers, was filled with 100 tons of rocks and sunk 1,000 feet from the shore. It is so designed that the harder the pull on the ski-



The winch-house, spar-tree, and bucket in the act of dumping at the Topkuk Chief project near Bluff, Alaska.

line which is fastened to it the deeper it will dig itself into the sea bottom. On the ice near the beach stands the 100-foot spar-tree upon heavy cribbing.

Skilled winchmen, who also run the hoist located on the ice, guide the two-yard Esco slack-line scraper back and forth on the ski-line. The bucket is run out and lowered to the end of the man-made pond, brought forward until it is filled, then raised and dumped at the spar-tree. Sluice boxes are set up at the dump and two pumps are kept busy sluicing up the dump as rapidly as possible before the ice goes out or thaws.

The Topkuk Chief company worked out a portion of the sea bottom nearer the shore with similar equipment during the spring of 1937. Results were so gratifying that the following spring extensive drilling was done to locate the gold channel and preparations for the new work were made during the summer. Morton Sullivan, director of company activities at Bluff, arrived by Wien Alaska Airlines on February 17 of this year, and immediately began operations. Joseph T. Sullivan is manager of the company.

DRAGLINE DREDGE OF LORD AND BISHOP NEAR VALLEY SPRINGS

(Continued from Page 7)

On the day shift six men run the entire plant. These include the dredgemaster or foreman, the winchman or operator of the dredge, an oiler for the dredge, a man to run the dragline, and a ground crew consisting of a welder or blacksmith and a bulldozer operator who prepares the surface of the ground to be worked. On the night shifts, only a shovel man, winchman, and oiler are at work. The entire operation represents an investment of about \$90,000.

Lord and Bishop recently purchased a new Marion three-yard dragline powered with a 200-horsepower Model L, six-cylinder Cummins Diesel engine to furnish the boat with material. Moving 200 yards of material per hour the Diesel uses only four to five gallons of fuel per hour. The dragline works three 8-hour shifts per day and feeds the dredge from 1,400 to 1,500 yards of material per shift.

The unit, which has been working since early in March of 1939, digs into the face of the pond down to bed rock which may be from a foot to 16 feet below the surface of the earth. Usually the gold lies with 18 inches of the bed rock. Exceptionally fast for such a unit, the Diesel dragline lifts from two to three, three-yard loads per minute. The unit is subjected, to constant shock loads when digging in close to the edge of the pond because the mud creates an amazingly strong suction on the bottom of the bucket.

As the dragline digs out the face of the pond, the material passes through the dredge and is expelled at the back end. The tailings thus constantly fill the back of the pond, as fast as the dragline digs away the face, and the whole unit makes a steady forward march.

Into SERVICE with CALVIN COOLIDGE



**MOVING MATERIAL FOR
15 Years
AND STILL WORKING!**

When Calvin Coolidge was elected President, back in 1924, this Pioneer Conveyor Belt entered service for The Long-Bell Lumber Co.

Throughout almost four administrations, it has continuously moved materials at low cost and is still giving reliable, trouble-free service!

Now—as we did then—Pioneer manufactures "balanced" belting with no weak member. In no other way could we make good our claim—that we will prove to give you lowest ultimate cost per operating unit of any belt you can purchase!

You'll profit by sending for the booklet, "How Pioneer Rubber Mills can help you get MORE VALUE for your belting dollar."

**LOWER COSTS WITH
PIONEER
BALANCED
BELTING**
CONVEYOR · TRANSMISSION
ELEVATOR

PIONEER RUBBER MILLS

353 Sacramento St., San Francisco
Plant at Pittsburg, California

Sales Offices:

Los Angeles Seattle Salt Lake City Chicago
Portland Tacoma Denver St. Louis

RICHARDS NAMED FEDERATED METALS VICE-PRESIDENT

ANNOUNCEMENT has been made of the election of A. H. Richards as vice-president of the Federated Metals Division of the American Smelting and Refining Company.

Richards, who maintains headquarters at 405 Montgomery Street, San Francisco, is general manager of the Tacoma, Washington, and Selby, California, smelters of A. S. and R. and will continue in that capacity. He has been associated with the company for nearly 40 years and was at one time general superintendent of the Garfield smelter at Salt Lake City, Utah. Richards is the first A. S. and R. vice-president to maintain his residence on the Pacific Coast. He is a member of the American Institute of Mining and Metallurgical Engineers.

A number of other changes in the Federated division were announced by Newhouse. Samuel Jacobson, manager of Pacific Coast activities, and Ralph Jacobson have resigned, and Jack Schwartz will succeed as Pacific Coast manager. F. W. Farnow has been appointed branch manager at the San Francisco plant, and Fred Walker, son of H. Y. Walker, New York, vice-president of American Smelting and Refining Company, has been named Pacific Coast sales manager for Federated.

The division is at present erecting a new plant in San Francisco, supplementing a new plant recently completed in Los Angeles.

DONALD W. SCOTT JOINS STAFF OF BATTELLE INSTITUTE

DONALD W. SCOTT, research engineer, has recently been added to the technical staff of Battelle Memorial Institute, large industrial research organization of Columbus, Ohio. He has been assigned to the concentration division which constantly works on developing and improving concentration methods and equipment for ores, coals, and other industrial materials.

Scott, a graduate of the University of Minnesota, recently received his M.S. in mining engineering from the University of Alabama, where he held a U. S. Bureau of Mines research fellowship. He is a member of Theta Tau, Tau Beta Pi, and an associate member of Sigma Xi and of the American Institute of Mining and Metallurgical Engineers.

WEST COAST MEMBERS OF A. I. M. E. WILL PICNIC

THE American Institute of Mining and Metallurgical Engineers will enjoy another annual picnic, "The Mid-Summer Dig," Saturday afternoon, August 19, at the Uplifters Club in Santa Monica, according to an announcement by G. A. Joslin, chairman of the Southern California section, 1200 Rives-Strong Building, Los Angeles.

Tommy Atkinson, chairman of the picnic committee, promises a surpassing program of entertainment and a barbecue steak supper. This outing joins all petroleum and mining engineers on the west coast in the big celebration of the year and is looked forward to with genuine pleasure.

WILLIAM VAL DeCAMP HONORED BY COAST MINING ASSOCIATION

WILLIAM VAL DeCAMP, manager of mines for the Hochschild interests in Bolivia, Peru, and Chile, who is in the United States on vacation, was guest of honor at a dinner given at Hotel Clark, Los Angeles, recently by the Mining Association of the Southwest. The dinner was attended by nearly 250 persons.

DeCamp, who has been a member of the mining association for many years, is well known in the southwest and California. He was for 12 years an executive of United Verde Copper Company at Jerome, Arizona, and later was in charge of work at the Yellow Aster mine, Randsburg, California, for the Anglo American Mining Corporation. He also served as manager of the Cardinal Gold Mining Company, Bishop, California, before going to South America in 1935.

W. J. COULTER ESTABLISHED SECOND FUND AT ALMA MATER

WILLIAM J. COULTER, general superintendent of the Climax Molybdenum Company, Climax, Colorado, and a mining graduate of the class of 1914 from the Washington State College, has given the second scholarship during the year to the school. Both scholarships are in memory of his wife, also a state college graduate, and are known as the Viola Vestal Coulter Scholarships No. 1 and No. 2.

Income from the first, presented last September, is used as an outright scholarship award. The second will be used as a loan fund for deserving students who will repay the fund. With the announcement of the second gift came the announcement of a contest to be sponsored by Coulter. Prizes of \$100, \$75, and \$50 will be given for the best papers on the subject, "If You were Establishing a Permanent Scholarship Fund of \$500, How Would You Do It?" Any state college student or graduate is eligible to compete.

GEOLOGICAL SURVEYS FINANCED BY STATE AND U. S. BUREAU

THE COLORADO legislature has appropriated \$25,000 to finance geological surveys within the state during the biennial period beginning July 1, 1939. This is matched by an appropriation from the U. S. Bureau of Mines. The sum is only sufficient to conduct technical surveys in comparatively few fields. Charles W. Henderson, in charge of the U. S. Bureau of Mines in Denver, serves as supervising engineer.

Geologists who have come to Colorado, each accompanied by one assistant, to continue their studies are: John S. Vhay to map the Alta Basin and surrounding region in San Miguel County; Richard P. Fischer to work on vanadium and uranium deposits of the Paradox Valley in the southwestern part of the state, assisted by B. S. Butler; Quentin D. Singewald to continue work north of Tarryall Creek to Breckenridge in Summit and Park counties; E. N. Goddard, in the Gold Hill district of Boulder County; and A. H. Koschmann, who will carry on his study of the Cripple Creek district in Teller County. Activity extends over a period of from three to four months.

levels. This discovery greatly extends the zone of known ore.

Charles G. Willis has completed preliminary work on the Goodwin mine 18 miles southeast of Quartzsite, Arizona, in the Cave Creek district, and is preparing to install a mill immediately for treatment of the gold ore.

Karl H. Kompfe, 686 Ellicott Square, Buffalo, New York, and Robert G. Beatty, Hamburg, New York, have acquired title to 1,200 acres of ground in the old La Paz placer field near Ehrenburg, Arizona. They are now sampling the property and if results prove satisfactory they propose to install a 1,000-yard plant for handling placer gravel.

The Big Horn mine located nine miles south of Wellton, Arizona, is being worked under lease by Dr. Calvin Eaton, Yuma, Arizona. Work is progressing under the direction of James Wilson, superintendent, and the shaft is now more than 225 feet deep. A car of gold ore has been shipped to the smelter. The mine is owned by Gust Svensson and Charles Hindman, both of Wellton.

The Mountain Copper Company, Ltd., William F. Kett, general manager, 351 California Street, San Francisco, California,

has optioned the Hallstead mine north of Virgilia, California, and is making preparations for a campaign of diamond drilling to test gold values. Machinery has already been installed. The Hallstead option was held for some time by the Virgilia Mining Company, operating the Ohio Point, Duncan, and other properties at Virgilia.

The Trebor Corporation, Robert D. Mueller, president, Mariposa, California, dragline dredging firm, has secured a five-year lease on property along Mariposa Creek owned by R. M. Starns. Sampling is expected to start within seven or eight months. The lease is understood to carry a three-year extension clause.

It is reported that the American Girl mine at Ogilby, California, W. D. McMullan, resident manager, will be closed down about September 1. The property, which has been operating steadily, was taken over recently by the newly organized Allied Mines, Inc., headed by Sidney B. Wood, Jr., 7983 Norton Avenue, Los Angeles, California. The mine is equipped with a 175-ton flotation plant which has been operating at capacity. A crew of about 95 men is employed at the property.

The Cardinal Gold Mining Company, A. J. Inderrieden, president, 1113 East River Road, El Paso, Texas, will hold its annual meeting August 15, according to a recent letter to stockholders. Since suspension of operations at Bishop, California, a year ago, the company has been active in examining properties. Several of the most promising were optioned and subsequently dropped. At present, options are held on three properties which are being given serious consideration.

A net profit of \$318,523 was reported by Natomas Company, Thomas McCormack, president, Box 1197, Sacramento, California, for the quarter ended June 30, 1939, after deductions for depreciation, depletion, and provision for federal income tax. This is equal to 32 cents a share on 980,250 shares of capital stock publicly held. For the first half of 1939, net profit was \$562,006 after depreciation, depletion, and provision for federal income tax, equal to 57 cents a share on the 980,250 shares of capital stock. Net profit for the June quarter of last year was \$395,268, and for the first half of 1938, was \$701,932. Reduced showing in the quarter just ended as compared with the 1938 quarter resulted from a combination of higher operating expenses and increased charges for depreciation, depletion, and miscellaneous expenses, coupled with reduced gross revenues. Gross revenues for the quarter amounted to \$489,661, compared with \$869,566 in the corresponding three months of last year.

Work is to begin immediately on construction of a \$10,000 pilot plant at the property of the Lava Cap Gold Mining Corporation, Nevada City, California, preliminary to construction of a cyanide plant which will cost an estimated \$40,000, according to Otto E. Schiffner, general manager. Construction of a cyanide plant has been contemplated for more than a year, and for many months experiments have been conducted both at the mine and by the American Cyanamid and Chemical Corporation in an effort to determine the best formula for treating Lava Cap ores by the cyanide process. Bert D. Harden will be in charge of the pilot plant. He has been conducting the tests which have been made. In the mine, the original vein has been encountered on the twelfth, or 2,400-foot level of the Central shaft, and indications are that it will soon be reached on the eleventh level. At the Banner shaft, additional sinking operations have been start-

ed which will continue to the 1,200-foot level. Ore bodies encountered on the third and fourth levels of the Banner did not come up to expectations so far as tonnage was concerned, but it is believed that ore bodies to be opened up by extension of the shaft will enable the company to secure tonnage from the Banner equal to that coming from the Central. The working crew at the property now totals 280 men.

Employees of the Empire Star Mines Company, Ltd., Grass Valley, California, voted nine to one in favor of a hospital association project submitted to them recently by means of a secret ballot. Plans for the new hospital have been drawn and it is believed that work will start at an early date. It will contain 17 beds and will cost in excess of \$50,000. Under the proposed plan, the hospital will be built by the company and will be leased to the Miners Hospital Association, a non-profit organization, which will be financed by the company and to which membership will be made available to employees at a fee of \$1.25 a month.

A crew of men is engaged in sinking a shaft at the Cate mine in the Elizabethtown district near Quincy, California, under the direction of John Adams, who, with associates, is engaged in developing the property. Recent tests are said to have shown a channel on the ground and placer mining will be carried on. Plans are under way for installation of a pump for water.

The surface plant and equipment of the Mattie mine, also known as the Alcalde, located near Grass Valley, California, have been purchased for installation at the Oro Flame mine near Alleghany, California. Additional equipment is also being purchased for the property and a crew of workmen is at present engaged in constructing bunk houses. The Oro Flame was taken over recently by the E. B. Pond interests, who are preparing to start active mining soon. The property is owned by John J. Connell of Alleghany.

A 150-ton flotation mill will be installed at the Cherokee mine south of Greenville, California. Extensive diamond drilling is said to have indicated ore bodies of sufficient quantity to warrant construction of the mill. Frank Humphrey is manager at the mine. The property is being reopened by Alfred L. Merritt of New York and San Francisco.

Work is nearing completion on construction of the new 150-ton mill at the property of the Indian Valley Mining Company, Greenville, California, and the plant is expected to be ready for operation early in August. The new building is of steel construction throughout and replaces the frame structure destroyed by fire last winter. The mill is being installed by the Miners Foundry and Supply Company, Nevada City, California. Gus L. Johnson is general manager at the mine. C. L. Hibbard, 1210 Western Avenue, Seattle, Washington, is president of the Indian Valley company.

A crew of five men is employed in development work at the German Bar mine, North Bloomfield, California, under the direction of Thomas E. Stephens, superin-

AVERAGE PRICES OF METALS
(Figures by American Metal Market)

	Copper Per Lb. Conn. Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.222	69.065
1926	13.795	8.417	7.327	62.107
1927	12.920	6.755	6.242	56.370
1928	14.570	6.305	6.027	58.174
1929	13.107	6.832	6.512	52.993
1930	12.982	5.517	4.556	38.154
1931	8.369	4.244	3.638	28.701
1932	5.792	3.181	2.881	27.892
1933	7.276	3.970	4.031	34.728
1934	8.658	3.8595	4.162	47.973
1935	3.880	4.0648	4.331	64.273
1936	9.710	4.7091	4.903	45.088
1937	13.391	6.0085	6.517	44.805
1938	10.225	4.7888	4.613	48.222
1939				
Jan.	10.425	4.970	5.00	44.714
Feb.	10.00	4.6918	4.916	44.75
Mar.	10.00	4.50	4.413	44.446
Apr.	10.00	4.50	4.155	42.75
May	9.60	4.40	4.048	42.75
June	9.00	4.1481	4.148	42.75
July	9.810	4.882	4.75	42.75
Aug.	10.125	4.90	4.75	42.75
Sept.	10.255	5.00	4.865	42.75
Oct.	10.981	5.10	5.015	42.75
Nov.	11.25	5.0913	4.913	42.75
Dec.	11.25	4.8423	4.50	42.75
Ave. 1938	10.225	4.7888	4.613	48.222
1939				
Jan.	11.25	4.826	4.676	42.75
Feb.	11.25	4.8045	4.50	42.75
Mar.	11.25	4.8241	4.50	42.75
Apr.	10.469	4.782	4.50	42.75
May	10.058	4.75	4.50	42.75
June	10.00	4.80	4.50	41.965
July	10.220	4.854	4.517	34.944

tendent. Ore from development keeps the mill in operation a portion of the time.

The **Roseklip Mines Company**, Henry S. Sweet, general superintendent, Bodie, California, has laid off most of the crew temporarily to permit installation of a new ball mill of considerably larger capacity and improved design, which will replace the one now in service. The balance of the mill machinery is also being repaired during the shutdown.

The mill at the property of the **Kelsey Mining Company, Inc.**, Placerville, California, has resumed operations, after having been closed down for some months, due to a shortage of water. E. J. Willard is in charge of operations at the mine. E. T. Willard, 519 California Street, San Francisco, is secretary and general manager.

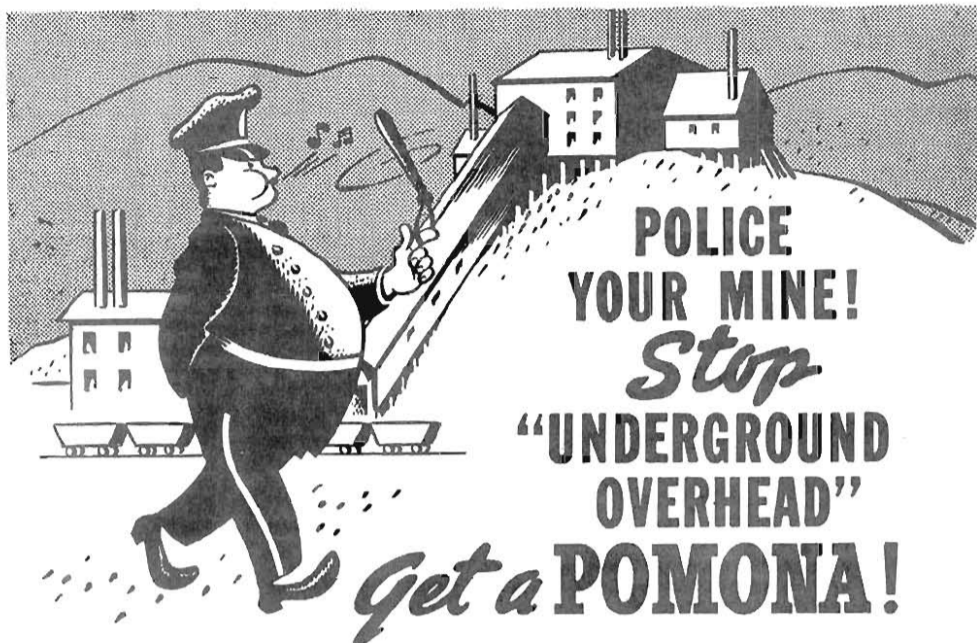
Milling operations have been started at the **Plumas-Eureka** mine near Johnsville, California, under the direction of Colonel R. W. Cunningham, lessee. Cunningham has held the property for the past year and he has installed a 60-ton milling plant. The old mine ore dump, which is said to contain approximately 100,000 tons, will be run through the mill. This work will be followed by active mine development and it is planned to develop sufficient ore to permit operation of the mill throughout the winter.

A compressor and headframe have been installed and the shaft is being cleaned out at the **Dead Horse** mine near Sonora, California, under the direction of Joseph E. King, Sonora, California, who holds a lease and option on the ground. The shaft is down 2,000 feet.

W. E. Grant and Charles Bryan have leased the **Mildred Lloyd** mine near Columbia, California, and are carrying on development work. Sampling and testing are in progress and an ore shoot which assayed as high as \$287 per ton is reported to have been encountered. This ore will be shipped direct to the Selby smelter.

C. Patterson, structural engineer and contractor, and W. E. Narkaus, mining engineer, have taken over the **Giant King** mine at Washington, California. Machinery and equipment are being installed and active mining is to begin at once. A mill site is being graded preparatory to construction of a 100-ton plant, which is expected to be ready for operation in about 90 days. Narkaus will be general manager at the mine and John Rondoni of Nevada City, California, will be mine superintendent. The property comprises about 100 acres and is owned by William Luce of Reno, Nevada. Considerable development has been done by tunnel methods.

A crew of five men is engaged in unwatering the present shaft and running a tunnel at the **Golden Streak Consolidated** property in the Sucker Hill district near Iowa Hill, California. The property is owned by the **Golden Streak Consolidated Mining Company** of Colfax, California, and is under lease to R. L. Norris, 3975 Eighth Avenue, Sacramento, California. A geophysical survey was made recently by the B and H Geophysical Survey Company, 195 Filomena Avenue, San Jose, California, and recent drillings have confirmed the result



IF you want lasting protection against the greatest enemy of water-lifting economy... get a Pomona!

Pomona Mine Pumps are ruggedly engineered to stand the gaff of mining operation. They are safeguarded to prevent unnecessary repairs or "pulling" jobs and consequent costly shut-downs. Pomona Mine Pumps are the only pumps with water-lubricated, resilient, revolvable rubber bearings and having grit-resistant bowl assembly and semi-open impellers to prevent sand-locking, non-reverse ratchets, eliminating "backing-off" ... pump head impeller adjustment and accessible, above-the-ground packing gland. When pump head is exposed, Pomona Mine Pumps are equipped with drip shields to prevent moisture or dew being sucked into the motor. Stators and rotors have moisture resistant windings. These, and other important, exclusive Pomona engineering features insure "Maintenance Economy" in place of "Underground Overhead". Pomona makes pumps for every mine requirement: De-Watering pumps (standard and inclined track), Mine Shaft Sinking pumps, Mine Station pumps.



POMONA

Water-Lubricated

TURBINE PUMPS

POMONA PUMP CO. ★ ST. LOUIS, MO. ★ POMONA CALIF.

Measured THOR

mean
FASTER
DRILLING
AT
LOWER COST



A THOR MACHINE FOR EVERY JOB

ROCK DRILLS

Made in several types and a wide range of sizes to meet varying requirements for sinking, drifting and stoping.



PAVING BREAKERS

Both valve and valveless types for light, medium or heavy duty demolition and street opening work.



CLAY DIGGERS— TRENCH DIGGERS

Light and heavy duty tools for digging gravel, clay and hardpan for trench digging, shaft sinking and excavation where ground is frozen or unusually stiff.



COCHISE ROCK DRILL MFG. CO.

A Division of the

INDEPENDENT PNEUMATIC TOOL CO.

6200 EAST SLAUSON AVE., LOS ANGELES, CALIF.

NEW YORK CHICAGO SAN FRANCISCO

FLEXIPIPE

The improved flexible tubing for mine and tunnel ventilation

This durable, cost reducing, flexible tubing has solved many ventilation problems peculiar to mining.

Send for free sample and full information.

BEMIS BRO. BAG CO., ST. LOUIS, MO.

of that survey, which located an extensive gravel body.

Dan Dobbs, Randsburg, California, and Warren Martin and Bert Rusa, both of Red Mountain, California, have taken over the Black Hawk mines near Randsburg. Glen W. De La Mar and his father, Frank De La Mar, former operators, are now located in Hollywood and Reno, respectively.

The Winfield Trust Company is making preparations for large mining operations on property adjacent to that of the Swanson Mining Corporation near Salyer, Trinity County, California. A camp is being established by the Winfield company and work will begin in the fall.

The Sierra-Kern Syndicate, gold placer operator, has leased 320 acres of the Pascoe Ranch in the Poso Creek district about 25 miles northeast of Bakersfield, California, and placer equipment is being installed. The property was tested some time ago by A. J. Clapham, Box 565, Bakersfield, California, trustee and engineer in charge of operations. A plant with a capacity of 50 yards a day is being installed at present with a view to enlargement as work progresses. The syndicate also has considerable acreage in the Piute Mountain area, where another plant will be installed shortly. A wet method of recovery has been developed which only requires about 800 gallons of water for each 50 yards of gravel handled. The syndicate also has under option several lode properties in the Kern County area which it is planned to place in operation shortly. Clapham is assisted by Harry Riskin of New York, who recently arrived to take an active part in the operations.

Lloyd Manning is installing a custom mill south of Baker, San Bernardino County, California. He has purchased a complete mill from E. W. Greenfield of Los Angeles, and plans to install additional units as business develops.

The shaft at the Mormon Hill mine near Rescue, California, is being retimbered preparatory to further development. The mill has been reconditioned to handle 30 tons a day and has also been equipped for operation by electricity. Leslie Hall is superintendent at the property. The mine was taken over recently by the Warwin Mines, Inc., Harry C. Kaufman, president, 2020 Sacramento Street, Los Angeles, California.

The Governor Mine Company, Francis Gage, manager, Acton, California, has enlarged its milling plant to an expected capacity of 100 tons daily. A six by eight ball mill has been added, together with six flotation cells to handle the increased output. The reconditioning of the old Red Rover mine, owned by the same group, is practically complete. The vertical shaft has been unwatered and retimbered to the 400-foot level. A new headframe with dumping trestle has been installed, together with a hoist and a two-drill compressor.

E. A. Wiltsee, Hotel Sacramento, California, is operating a dredge on the John C. Forni Ranch one mile east of El Dorado, California, which is at present handling about 2,800 yards of gravel daily. It is

understood that production will be stepped up to about 4,000 yards daily in the near future. A crew of 21 men is employed and work is on a three-shift basis. It is estimated that eight months to a year will be required to work the available ground. The channel to be worked is about 300 feet in width and about two miles long. Equipment includes a three-yard gasoline shovel equipped with a 60-foot boom, 40-foot trommel, and hydraulic jigs. Merrill Yost, 1015 Twenty-fifth Street, Sacramento, California, is superintendent. J. J. Arams, El Dorado, is foreman.

Arthur May and F. J. Seder, Box 328, Lucerne Valley, California, have contracted with Henry J. Friedrich, 221 South Fifth Street, Alhambra, California, for purchase of a group of claims in the Ord Mountain district for \$50,000. The claims include the Jessie, Rambler, Alma, Emelie, Cumberland Meta, Little Henry, Vulture, Franklin D. Roosevelt, and Old Frank.

A small crew of men has been employed steadily in development work at the Texas Hill mine, Coulterville, California, and a large body of milling ore has been blocked out. The property is being put in readiness to start milling as soon as the rains make water power available. The mine is operated by W. J. Beatty and O. E. Crouse. The latter plans to go east in the near future to arrange for financing with a view to operating the Texas Hill on a large scale. Beatty and Crouse are also interested in the Bandarito mine a mile from the Texas Hill, and Beatty has been superintendent at that property. Negotiations are nearing completion for sale of the Bandarito lease, however, and upon completion of that deal, Beatty will take charge at the Texas Hill.

The Butler Mining Corporation, E. L. Spencer, president and general manager, 403 Benjamin Franklin Life Building, Santa Barbara, California, is proceeding with development of the property formerly held by the Vera Mines Corporation. The latter organization has discontinued business entirely and its Uncle Sam mine, Kennett, California, was taken over by Spencer and associates in January, 1939. The mine is owned by the Dakin Company and is under lease to the Butler group. The new operators plan construction of a 100-ton mill at the Uncle Sam by December 1, and in the meantime development work, consisting of drifting, raising, and blocking, will continue. A complete surface transit survey has been made of the property and the main 2,863-foot tunnel has been rehabilitated. Some 14 veins are cut by this tunnel, known as the James. It is a standard eight by eight-foot opening. Sulphide ores are encountered in veins averaging from three to 13 feet in width and assays run from \$9 to \$52 per ton. The Butler corporation owns the Lucky Boy mine near Hornbrook, California, and a 20-ton stamp mill together with ore bins, crushers, plates, and other equipment, has recently been placed in operation. Additional equipment, consisting of table and jigs, will be installed immediately. The corporation employs a crew of nine men. Colonel L. R. Ball is consulting engineer and general superintendent in charge of both properties. C. A. Dailey is mine super-

intendent at the Lucky Boy, Hornbrook. F. W. Cole, Jr., is chief mechanical engineer; William Schweers, safety inspector; and Ernest T. Yee, chief clerk, all located at Kennett. The Butler Mining Corporation has an authorized capital of \$500,000, and a permit has been issued by the state corporation department for sale of 40,000 shares of its capital stock to provide working capital and for the acquisition of adjacent properties.

Ore is being accumulated at the Harvard mine, Jamestown, California, preparatory to a test run to be made at the Pine Tree mill in Bear Valley, California. It is planned to mill about 1,300 tons in order to check results of diamond drilling done in the last seven months. According to Philip Bradley, who is in charge of test operations, approximately 14,000 feet of drillings have been made in the survey of the property and 7,000 assays have been completed in the office at the mine. The Harvard is under option to the Alaska Juneau Gold Mining Company, P. R. Bradley, president, 1022 Crocker Building, San Francisco.

C. E. Scriven, operating the Scriven mine in the Mt. Oro district near Nevada City, California, reports that he has opened a four-foot vein of milling ore in a 50-foot open cut along the vein. A mill run of the ore is said to have averaged \$30 per ton. The method to be used in the further development of the mine is yet to be decided upon. The property is equipped with a 50-ton ball mill.

A considerable amount of development work has been completed by Ed Martine at the Golden Edna mine in the Mt. Oro district near Nevada City, California.

Jeremiah Platz, Camptonville, California, reports a gold content of \$15.40 in a recent assay of ore from his Fern Leaf mine in the Slate Range district near Camptonville. He is making no effort to recover the molybdenum values, as development of that ore requires the construction of a plant, which Platz is not financially able to handle at present.

T. B. Peterson, Randsburg, California, and associates have recently made a 50-ton shipment of ore to the Butte Lode mill from the Lucky Boy claim in the Rand mining district. The ore is said to have averaged \$70 per ton.

Fifty-five tons of gold ore, valued at \$14 to \$15 per ton, are being shipped monthly from the Yellow Dog property by Bert Wegmann and A. J. Meehl, lessees, Mojave, California.

James Mitchell has acquired a lease at the Four Jacks mine near Mojave, California, and he is making plans for extensive development work on his property in the near future.

The Ortega mine located about five miles west of Mariposa, California, in the Agua Fria section has been leased by E. R. Baker, who plans immediate development of the property. Equipment includes a small mill. Baker was formerly connected with the Diltz mine at Mariposa.

Placer operations are in progress at the property of the Blue Bar Mining Company,

E. M. Steel, manager, Happy Camp, California. Equipment includes a dry land dredge and a 1 1/4-yard Lima shovel. The property is operated by a Seattle group. Steel's Seattle address is 808 Third Avenue.

Daily production from the properties of the Cresson Consolidated Gold Mining and Milling Company is approximately 350 tons

COLORADO of gold ore. About 235 men are at work in the mine, which has been opened to a depth of 2,380 feet. Plans call for a deep drainage tunnel to be driven by the Golden Cycle Corporation to

drain the Cresson mine. Merrill E. Shoup, Box 86, Colorado Springs, Colorado, is president and A. H. Bebee of Victor is general superintendent. Others on the operating staff include: W. G. Moulton, Jr., of Cripple Creek, chief mine engineer; Guy Rorabaugh, Cripple Creek, chief mechanical engineer; James Diehl of Victor, chief electrician; S. W. Baker, Box 6, West End Station, Colorado Springs, purchasing agent; and P. B. Van Dolah of Victor, safety supervisor.

Six hundred feet of drifting have just been completed by the Gold Hub Mining Company at its property near Silverton, Colorado. Although the mine is equipped with a 75-ton flotation milling plant, op-
(Continued on page 26)

FOR TODAY'S MINERS *Everywhere*



**A DOUBLE
GUARANTEE OF
YEAR 'ROUND
SAFETY**



EDISON ELECTRIC CAP LAMPS M.S.A. SKULLGARDS

Greater strength for real head protection . . . more light to work by! These are the basic advantages of M.S.A. Skullgards and Edison Electric Cap Lamps—and when you add true wearing ease and comfort to Skullgard's lightweight, non-deteriorating strength,—and to the Edison Lamp's unequalled illumination add its absolute dependability and better direction to the job . . . you have the reasons why more than 400,000 coal and metal miners throughout America and the world use and are benefited by these premier safety products. Let us tell you of their year 'round savings, too! We'll gladly arrange a demonstration at your convenience, and explain our Edison Lamp rental plan of installation—without obligation. Write for descriptive Bulletins in the meantime!



MINE SAFETY APPLIANCES CO. Braddock, Thomas & Meade Sts., Pittsburgh, Pa. District Representatives in Principal Cities

M. S. A. Products include Breathing Apparatus . . . Inhalators . . . Commo Respirators . . . Masks of all Types . . . Gas Indicators . . . Gas Detectors . . . Safety Goggles . . . Protective Hats and Caps . . . Edison Electric Cap Lamps . . . Safety Belts . . . Safety Clothing . . . First Aid Equipment. Descriptive Bulletins will be sent on request.

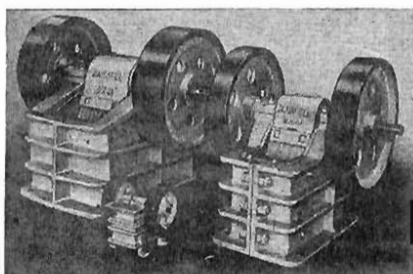
Ozark Smelting and Mining Co.

BUYERS OF

Lead and Zinc Ores
Pigment Grade

COFFEYVILLE, KANSAS

HASSELL JAW CRUSHERS



ECONOMIZE MODERNIZE

WITH
HASSELL

BULLETIN NO. CR139

HASSELL ENGINEERING COMPANY

ENGINEERS • CONSULTANTS • MANUFACTURERS
COLORADO SPRINGS, COLORADO

Pacific Northwest
Headquarters for
High Grade White Iron

GRINDING BALLS

Preferred by Largest Mines
In the West

Inquiries Solicited.

Northwest Steel Rolling Mills

4315 9th Ave., N.W. — Seattle, Wash.

Development is continuing at the Gold Belt mine four miles west of Morenci, Arizona, with four men employed. The mine, owned by James Horton of Tennessee, is under lease to Mike Moschetto, Box 134, Morenci, and G. I. Pace, Clifton, Arizona. Some gold and silver ore has been shipped and preparations are being made for further shipments.

A hoist and compressor are being installed at the South Sycamore property located 10 miles north of Clifton, Arizona, preparatory to developing and shipping ore. If conditions warrant, it is planned to install a mill later. Three men are employed under the direction of S. T. Stevens, Clifton, who, with associates, is working the mine under lease.

Surface buildings, including cabins, assay office, power house, change room, loading chute, etc., are being erected at the American mine in the Harshaw district near Patagonia, Arizona, and the property is scheduled to go on a production basis during August. A crosscut tunnel will be driven 180 feet to connect with the bottom of the caved shaft and an 80-foot drift. It is planned to produce about 100 tons weekly when work gets under way. The property, which is a silver producer, is being worked under lease by J. H. Macia, Jr., Patagonia. Four men are employed.

W. N. Sim, Pearce, Arizona, who is operating under lease the Commonwealth mine at Pearce, plans to change the present equipment to fit a new process which he will use for treatment of ore, and he will also put in additional equipment to bring the plant's capacity up to 150 to 200 tons daily. Power is furnished by a 100-horsepower Snow Diesel engine and Sim is considering securing additional power from the Sulphur Springs electric project. There are said to be available 100,000 tons of tailings in one dump averaging \$2.40 per ton, and 15,000 tons in the mine running from \$6 to \$12 per ton. The direct milling cost for the dump is estimated at \$1 per ton.

A fall of rock estimated at 50,000 tons or more in the Portland mine near Kingman, Arizona, has caused a complete shutdown of the mine. The property, which was operated by the Gold Standard Mines Corporation, Richard DeSmet, general manager, Box 151, Kingman, was scheduled for abandonment and plans had been made for the removal of all equipment and tools. However, the fall of rock covered the tigger hoist, drills, steel, and ore cars and track, all of which will be abandoned by the company. The Gold Standard mill operations will not be affected by the shutdown as there is sufficient ore in sight at the Tyro and Katherine properties to assure continuous capacity milling.

The 100-ton selective flotation mill erected last year at the Oro Plata mine in the Cerbat Mountains 16 miles north of Kingman, Arizona, and recently taken over by the Ogden C. Chase interests of 420 Kearns Building, Salt Lake City, Utah, is in operation. The mill is treating ore from the Oro Plata, the Eagle group, the Bobtail, and other properties in the dis-

trict. The new management plans to open up a number of other properties which have probable ore in sight for treatment in the plant.

Edwin O. Albiez, Box V, Wickenburg, Arizona, has filed application with the state water commission for permission to appropriate 2,500 gallons of water daily from Mahoney Wash and 2,500 gallons daily from Comet Wash for domestic purposes, and 15,000 gallons daily from Comet Wash for mining and milling purposes. Both washes are tributaries of the Hassayampa River. Albiez is the owner of the Super X group of claims located 15 miles east of Wickenburg, which is being worked under lease and option by Alfred Schmid under the name of Atos mine. Julius Huebner, Wickenburg, is general manager.

The Oatman Eastern Gold Mining Company, James J. Moss, president, 16 West Pedregosa Street, Santa Barbara, California, is arranging for construction of a 100-ton cyanide plant on the Adams and Gold Chain properties near Kingman, Arizona. Ample tonnage of low-grade gold ore is said to be available on both properties.

The Copper Belt mine 21 miles southwest of Aguila, Arizona, in the southern Harqua Hala Mountains, is being worked under lease by Tom McKay, William James, and Angel Campbell.

The Plymouth mine in the Copper Basin district near Prescott, Arizona, owned by Paul Donley, 230 South Montezuma Street, Prescott, is being worked under lease by L. Schnellenburger, A. Mitchell, and Ben Eyer. The mine is equipped with a hoist, compressor, and other machinery.

The new 600-ton sand-leaching cyanide plant of Santa Fe Gold Mines, Inc., Victorville, California, has been placed in operation.

A crew of about 145 men is employed under the direction of Harlan H. Bradt, managing engineer, 234 East Colorado Street, Pasadena, California. The properties were acquired from the Arlington Mining Corporation and the new project has been privately financed through the Bralowe Corporation of New York by a group of North and South Carolina and New York men who are also operating the Haile gold mine near Kershaw, South Carolina. New York offices are located at 55 Liberty Street, and the mine address is Box 668, Victorville.

Properties of the Fremont Gover Company at Drytown, California, have been closed down with only a skeleton crew of engineers and pump men remaining at the property to pump water from the Fremont. The mines have operated for the past two years and were being worked at full capacity when the closing order was issued. H. S. Worcester, Drytown, is manager of the company.

Active work is under way at the Ortega mine located five miles west of Mariposa, California, under the management of E. R.



Baker, lessee. Timbering, mill rehabilitation, and sinking, are all under way and it is planned to have work on a three-shift basis in the near future.

The property of the Calaveras Central Gold Mining Company, Ltd., Angels Camp, California, is reported being reopened. The mine is equipped with a mill and washing plant and is worked through a 350-foot shaft. A flow of 120,000 gallons per day provides sufficient water to supply the mill and washing plant. Harry Sears, Angels Camp, is president of Calaveras Central.

John D. Bardill, Pine Grove, California, is reported to have taken over the Champion mine near Westpoint, California. The old drift on the 500-foot level is being opened up under the direction of Bill and Leo Lorang, who are in charge at the mine.

H. Hanson, Bear Valley, California, is operating under lease the Nelly-Kayo mine located two miles from Bear Valley. He has sunk the shaft to a depth of 100 feet and is now driving a 200-foot tunnel on the vein. The ore is said to average \$40 to \$50 per ton. The mine is equipped with a 25-ton Ellis mill. Hansen is foreman for the Pine Tree and Josephine mines of the Pacific Mining Company and is operating the Nelly-Kayo as a private venture.

Glenn and John Moss have leased the dump and upper levels of the Diltz mine, Mariposa, California, and they are now treating ore and also opening an adit level from the surface. The property, which is located in the Sherlock district 10 miles northeast of Mariposa, is owned by the Diltz Mines Trust Estate, the principals of which are E. R. Baker, A. F. Grant, H. C. Fowler, and Ernest Roblin.

Sam Lebarry is working the Nutmeg mine in the Whitlock district near Mariposa, California. A four-foot vein on which he is now working is said to average \$18 per ton. The mine is opened by a 1,000-foot vertical shaft and equipment includes a new International engine, a two-stamp mill, and a gas hoist.

Values at the Yellow Metal mine on Saxon Creek near Mariposa, California, are reported to be running as high as \$50 a ton with the main vein averaging \$27. The mine is equipped with a two-stamp Joshua Handy mill with plates and concentrator, and power is furnished by a Diesel engine. Vernon L. Jeffreys is superintendent. The property is owned and operated by the Jeffreys Investment Company of Oakland, California.

Chris P. Merrill, Mariposa, California, plans the installation of a mill at the Sunshine mine in the Whitlock district near Mariposa, following three months of development work. The ore is said to average \$22.50 a ton. The mine is owned by L. Diffenbaugh of Berkeley.

A new working shaft is planned by John Elam, Mariposa, California, and associates for their mine in the Whitlock district. After sinking a 135-foot shaft on low-grade ore recently, they ran a south drift which encountered 2½ feet of \$40 material.

A diamond drilling program is planned for the Feliciano mine located 2½ miles southwest of Briceburg, California, according to Superintendent Gleason. The work will be carried on from a crosscut in the tunnel with a view to locating the vein.

D. M. Broy and C. A. Fletcher, operating under the firm name of Lewis and Broy, 1638 Russ Building, San Francisco, California, have secured an option on the Confidence mine at Confidence via Sonora, California. The option was secured from Hales and Symons, Sonora, and Frank C. Holman of the Tuolumne Foundry and Machine Works, Sonora. Holman purchased the equipment at auction when the mine was closed down by the Confidence Gold

Mining Company, but the mine has been kept free of water. A crew of five men is engaged in retimbering the air shaft and in doing other repair work preparatory to a thorough examination of the property. C. A. Fletcher, Jr., is in charge at the mine.

The main shaft at the property of the Stockton Hill Corporation, Walter R. Woock, president and general manager, Box 126, Auburn, California, is being enlarged to three compartments, and concreted, preparatory to erection of a 50-foot steel headframe, ore bins, and 100-ton cyanide plant. Tests conducted in the company laboratory and by the Dorr Company of Westport, Connecticut, have shown

PREFERRED Stock

DFC Metallurgical Clay

Goods are preferred by assayers the world over... because for more than 60 years they have met the most exacting standards for uniformity and dependability.

CHIMNEYS - ROOFING DISHES - ANNEALING
COFFERS - TRAYS

The DENVER FIRE CLAY Company

EL PASO, TEXAS
NEW YORK, N. Y.

DFC

SALT LAKE CITY, UTAH

DENVER, COLO., U.S.A.



INVESTIGATE—

—THE NEW GECO ENGINEERING PLAN—

Plant design and construction are not new departures from the true function of our organization which for 29 years has specialized in this branch of engineering.

GECO Plants are designed to meet the metallurgical requirements of your ore, and to operate with the greatest possible economy, with no attempt to adapt a stock flow sheet and specific equipment to the ore.

The NEW GECO PLAN provides the economical way to build a properly designed mill.

Bulletin 3402 tells the story!—send for it.

The General Engineering Company
CONSULTING METALLURGICAL ENGINEERS

159 Pierpont St.
SALT LAKE CITY
NEW YORK CITY

TORONTO

LONDON

For . . .

- ENGINEERS
- STUDENTS
- OWNERS

The Examination of Placer Deposits

By THOMAS A. GRAVES

168 pages, illustrated, \$3.00

Here is a wealth of information on the occurrence, examination, and exploitation of placer deposits in a handy little book that can be conveniently tucked away and carried in the field. It covers such subjects as: classification and formation of alluvial deposits, concentrates and their significance, gold, age of placers, distribution of placers, placer exploitation—equipment and methods, placer examinations, economic considerations, and sampling methods and equipment. Valuable tables are also included.

THE MINING JOURNAL
PHOENIX ARIZONA

SPIRALOK VENT PIPE

A stronger lightweight pipe
for all

AIR-VACUUM-EXHAUST LINES

Sizes 4 to 8 inches

Write for Booklet S

PACIFIC PIPE CO.

319 Main St., San Francisco

the ore to be amenable to the cyanide process after the free gold has been removed by jigs or other methods. There are blocked out on the 265-foot level some 20,000 tons of mill-grade ore, and development on the 415-foot level shows indications of doubling that tonnage. A drift being run on the lower level is opening up satisfactory ore and the face of the drift shows the vein to be 5½ feet wide. It is planned to continue the drift for 1,000 feet.

A shovel, trommel, and other machinery are being installed at the Fiori mine in the Newtown district near Placerville, California, preparatory to active operation by the Newtown Mining Company, Edward R. Dathe, superintendent, Route 1, Box 62, Placerville. The company is said to hold leases on approximately two miles of ground along the south fork of Webber Creek. The Fiori property contains 40 acres and is owned by H. Lawson of Placerville. The Newtown company is being incorporated with John A. Adams, Bakersfield, California, president; C. Mankel, Sacramento, vice-president; William C. Dathe, San Francisco, secretary-treasurer; and E. R. Dathe.

A. M. Strong, Room 1212, 215 West Fifth Street, Los Angeles, California, and associates, have a small crew of men engaged in dewatering the 150-foot shaft of the Eagle King mine near Grizzly Flats, California. The purpose of the present work is to get in under the old workings which in an earlier day are said to have yielded considerable values.

A new mill is under construction and machinery is being installed at the Simpson mine, Leevining, California, under the direction of Russell F. Collins, Box 432, Leevining. The new plant is of the Bell type with an automatic amalgamator and when completed will increase the capacity of the plant and will also permit a higher extraction of values. It will replace the old type stamp mill. The mine is operated by the Mutual Gold Corporation, 401 Fernwell Building, Spokane, Washington.

Ore production at the Pennsylvania mine in Browns Valley has been discontinued for the present by the Empire Star Mines Company, Ltd., Grass Valley, California, in order to permit extension and enlargement of surface equipment. Reports are current that plans are under consideration for enlargement of the mill, erected about two years ago at the Pennsylvania. Shaft sinking, which is now at a depth of more than 1,700 feet, is to be continued to the 2,300-foot level. Robert Hendricks is manager of the Pennsylvania and E. R. Bennett is superintendent at the property.

The three-compartment Patten shaft of the Keystone Mine Syndicate, T. S. O'Brien, superintendent, Amador City, California, has been reopened to the 1,000-foot level and about 200 tons of ore are being mined daily. The company has recently taken an option on the Bunker Hill mine near Amador City, owned by the Amador Mines Company. Keystone syndicate recently purchased the Original Amador mine group and ore is being treated in the 350-ton Original Amador mill. Charles H. Seger-

strom, Sonora, California, is agent for the syndicate.

A hydroelectric plant has been installed at the Plumas Eureka mine near Johnsville, California, by Colonel R. W. Cunningham, lessee, Blairsden, California, to furnish power for the 60-ton milling plant recently completed. The old dump will be treated while reconconditioning of the mine workings is under way.

Fred S. Johnson, Quincy, California, is preparing to work a portion of the famous Jura gravel channel located about 11 miles from Quincy. He controls about 1¼ miles of the channel and has tapped it by means of a shaft. The excessive water flow, however, forced him to run a bedrock tunnel, which is now in more than 300 feet. Another 1,500 feet will tap the center of the channel, it is believed. The channel runs from 150 to 400 feet in width and the gravel is said to be between 45 and 50 feet thick.

Gold production at the Operator Consolidated Mines Company, Johannesburg, California, amounted to 139 ounces for the month of July, according to an announcement by Harold G. Hunt, Randsburg, California, secretary and manager. A newly encountered vein is said to assay from \$30 to \$50 a ton. Development is proceeding at several different parts of the mine. G. Basil Blonsky, Randsburg, is engineer in charge of mine and mill.

The preliminary report of Alaska Juneau Gold Mining Company, P. R. Bradley, president, 1022 Crocker Building, San Francisco, California, shows an estimated profit of \$97,100 for July, 1939, before allowance for depreciation, depletion, and federal income taxes. This compares with an estimated profit of \$133,900 for June, 1939, and \$190,300 for July of last year. For the seven months ended July 31, estimated profit before charges was \$658,500, compared with \$1,192,800 for the like period last year. July gross revenue was \$368,500, compared with \$398,500 for June and \$456,000 for July, 1938. Tonnage mined and trammed to the mill in July amounted to 378,230, compared with 388,480 in the preceding month, and 378,150 in July, 1938.

Operations of the Argonaut Mining Company, Ltd., Alex Ross, general superintendent, Jackson, California, for the six months ended June 30, 1939, showed a total revenue of \$342,246 from its Argonaut mine, of which \$169,907 was produced in the first quarter. Tonnage milled for the six-month period was 46,000, of which 22,500 was milled in the March quarter. At the Plymouth mine a 500-ton tailings treatment plant was installed and the first month of operation showed a profit of \$926 after all charges except federal income taxes. Net profit from the Argonaut and Plymouth properties for the six-month period totaled \$8,077 after interest charges and after non-operating income of \$23,235, but before charges for depreciation, depletion, or federal taxes. A profit of \$2,895 on the same basis was reported for the first quarter of 1939. Comparative results for 1938 are not available as the company's properties were shut down early last year due to a fire.

Walter Hayter, Camptonville, California, has been authorized to divert 15 cubic feet of water per second from Humbug Creek for mining and domestic purposes. Estimated cost of the project is \$4,000. Louis A. Maire, Denny, California, has also been granted a water permit, authorizing him to divert 75 cubic feet per second from Panther Creek for mining purposes, at an estimated cost of \$20,000.

An application has been filed by E. A. Van Goerlitz, Graniteville, California, for a permit to divert 30 miner's inches of water from tributaries of the Middle Fork of the Yuba River for power, mining, and domestic purposes. Estimated cost of the project is \$2,500. Van Goerlitz operates the Keller mine at Graniteville.

Frank J. and Dorothy F. Kipp, Rescue, California, have applied for permission to divert three cubic feet of water per second from Webber Creek for power and mining purposes, at an estimated cost of \$5,000.

The McGeachin Mining Company, I. E. Rose, general manager, Iowa Hill, California, has made application for a permit to divert 190 cubic feet of water per second and 2,200 acre feet per year from Humbug Creek and Shirttail Canyon, tributary to the North Fork of the American River. Company offices are located at 905 Forum Building, Sacramento, California.

C. Beer, 1725 Silverlake Drive, Los Angeles, California, has applied for permission to divert three cubic feet of water per second from Taylor Creek in Siskiyou County for mining. Walter M. Gleason, 2314 Shell Building, San Francisco, has made application for 50 cubic feet per second from Willow Creek in Shasta County for mining. E. G. and George P. Chapman, Weaverville, California, propose to divert three cubic feet per second from Soldier Creek for irrigation, domestic, and mining purposes. Mrs. Ellemerie Morgan, Foresthill, California, seeks to divert 165 cubic feet of water per second from Deep Canyon, Beartrap Gulch, and Grouse Canyon, tributary to the Middle Fork of the American River for mining and domestic purposes.

Earl Storrs, Auburn, California, and associates are opening up the Lone Star drift mine 4½ miles east of Placerville, California, with a view to sampling the property.

The flow-sheet is being prepared for the new 150-ton flotation plant to be installed at the Cherokee mine near Greenville, California. Tests have been made by the Pan-American Engineering Company and by the American Cyanamid Company. The new mill is expected to be of steel construction throughout. Hal M. Lewers is metallurgist. At present a double-drum, 85-horsepower hoist and a 125-horsepower Diesel electric Caterpillar are being installed at the property. The Caterpillar will be used as a standby for the mine pumps. Frank Humphrey is manager at the mine.

Anglo American Mining Corporation, Ltd., Walter Lyman Brown, president, 200 Sansome Street, San Francisco, California, reports for the quarter ended June 30, 1939, a net profit of \$71,806 before deductions for depreciation, depletion, etc.

Revenue from sale of gold and silver bullion totaled \$178,885, while that from other sources amounted to \$22,596. Operating costs were \$129,675. At the property of the Carson Hill Gold Mining Corporation, Melones, California, 98,861 tons of ore were milled during the second quarter, resulting in an operating profit, before deductions for depreciation, depletion, etc., of \$31,617, after including all expenditures for development as well as for repairs and renewals. No portion of this profit has been taken into the books of Anglo American, however, and it will be taken in only as dividends may be declared by Carson Hill. At the Yellow Aster mine, Rands-

burg, California, Anglo American is returning to the glory hole method of mining. Two bulldozers are benching off the top of the old glory hole preparatory to blasting it down, and it is estimated that ore from the new operations will be started through the mill the latter part of August or early in September. For several months all millings have come from the old dump and tailings pile. The Yellow Aster crusher handled 87,000 tons from the dump, 29,700 tons of which were milled. The cyanide plant, in addition to the 29,700 tons from the dump, treated 13,800 tons of tailings, bringing the total handled in the cyanide plant to 43,500 tons.

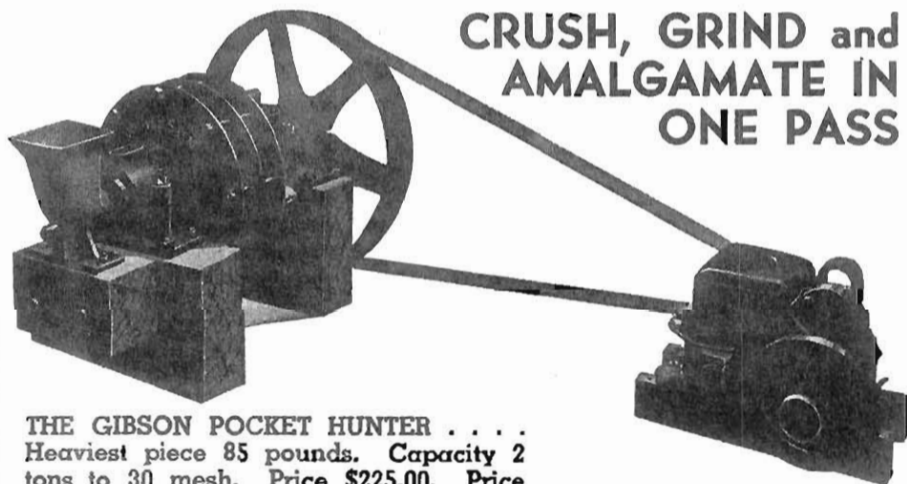
SAVES GOLD OTHERWISE LOST



Built in sizes from 25 tons to 2000 tons capacity

Repeat orders coming in from all parts of the world are positive proof of the efficiency of the Gibson Impact Amalgamator in saving the fine gold, amalgam and mercury that escape from the other amalgamating devices.

The Gibson Impact Amalgamator



CRUSH, GRIND and AMALGAMATE IN ONE PASS

THE GIBSON POCKET HUNTER
Heaviest piece 85 pounds. Capacity 2 tons to 30 mesh. Price \$225.00. Price with belting and 1½ h.p. engine \$290.00.

The Pocket Hunter will crush two-inch material, grind and amalgamate in one pass. The wearing parts of the mill are built of manganese steel and the balance of heat-treated chrome-nickel steel. The mill is built for mule-back transportation and is guaranteed unbreakable. Will be taken back in exchange for 10-ton mill any time inside of one year. Never before has such value been offered to the mining public. Also built in 5, 10, 12, 25, 50, and 100-ton capacities, which will handle FOUR, SIX, and EIGHT INCH material without a rock breaker.

Write for catalogue describing Gibson Counter Balanced Rod and Ball Mills, Prospectors' Friend Mills, Flotation Cells, Amalgamators, Concentrators, Rock Breakers, Ore Feeders, Mercury Feeders, Oil Feeders, Retorts, etc.

W. W. GIBSON

1801 Webster Street

Alameda, California

See Our Exhibit at the Mines, Metals and Machinery Building . . . Golden Gate International Exposition

MINE TANKS

For permanency and low cost. Complete stocks of clear, dry Redwood and Douglas Fir are available.

CYANIDE PLANTS
AGITATOR TANKS
COOLING TOWERS



ZINC BOXES
THICKENER TANKS
ORE BINS

Write for prices and complete information

PACIFIC WOOD TANK CORP.
461 Market St. San Francisco, Calif.

ALLISON STEEL MFG. COMPANY

Mine and Mill Buildings Mine Rails
Ore Cars Steel Gallows Frames
Cochise Jackhammers Ball Mills
Muck Plates Crucible Drill Steel
Detachable Bits — Sullivan
Regrinding of All Types of Detachable Bits

South 19th Avenue, Phoenix, Arizona
Phone: 3-5161

Flotation Reagents

Bear Brand Xanthates

Sunny South D. D. Pine Oil-A

Complete line of all standard flotation reagents, also metallurgical and assay chemicals carried in stock.

H. J. Baron Company

805 Mills Building

EL PASO

TEXAS

For exceptional convenience, courteous service . . . and reasonable rates, choose

600 ROOMS \$2.50 UP

HOTEL

PHILADELPHIAN

DANIEL CRAWFORD, Jr., Manager

39th & Chestnut Sts., Philadelphia, Pa.

FLEXIPIPE

The improved flexible tubing for mine and tunnel ventilation

Flexible in every sense of the word, this air-tight canvas duct carries a continuous volume of fresh air wherever it is needed. No air is wasted or sidetracked. Send for free sample and full information.

BEMIS BRO. BAG CO., ST. LOUIS, MO.

Installation of a flotation unit for extraction of gold from sulphide material is planned by the Dakins Company, Robert D. MacAfee, Jr., superintendent, Nevada City, California. The company, which is carrying on both drift mining and dredging, plans the unit for treatment of tailings from the old Champion mill. It is also planned to increase the capacity of the Dakins dredge to 1,500 yards daily.

J. H. Lashbaugh, superintendent of the Seven Aces mine north of Alleghany, California, is engaged in sampling placer deposits located below the ore bodies of the Plumas Eureka mine. Lashbaugh and associates are considering installation of a large dragline dredge to work the property.

Edward Herkelrath and Walter Schoonmaker, working the Wade No. 1 claim near Randsburg, California, have encountered what is believed to be the extension of the Hatton vein, and they are sinking a shaft on the hanging wall. It is planned to install a hoist in the near future. The claim is being leased from Frank Royer.

Gold quartz was uncovered recently at the Baltic mine four miles south of Callahan, California, while workers were leveling the ground preparatory to erection of a new cyanide-flotation plant. The vein is reported to be sampling from \$50 to \$500 per ton with promising indications for development of a valuable gold deposit. A new site has been selected for the plant.

W. J. Quackenbush, 917 Ronan Avenue, Wilmington, California, has purchased the Morris Albertoli lease on the Eureka mine located on Soledad Mountain near Mojave, California. Albertoli, who has operated the mine for the past two years, held a 10-year lease from Mrs. Grace Garrison of Long Beach, and Mrs. Agnes Raeburn of Los Angeles. Quackenbush plans extensive development work on the lower tunnel and will crosscut on a large vein running east. The property is opened by about 700 feet of tunnels and an 80-foot winze. Albertoli will devote his time to the development of his property adjoining the old Skidoo mine near Death Valley.

The Mary Jane gold mine above Fuller Lake near Downieville, California, is being reopened by Larry Landry of Nevada City, California, and James Murphy of Grass Valley, California. Pumps and other machinery have been installed, unwatering of lower workings is proceeding, and the shaft will be deepened to connect with tunnel workings thus facilitating the opening of territory believed to contain valuable ore. The mine is opened by a 1,150-foot tunnel and extensive lateral workings. Good ore is said to have been exposed when excessive water forced cessation of activities.

Wallace J. Matson has purchased a one-fourth interest in the Elkia mining property near Sonora, California, and plans have been announced for further development of the mine. Installation of a 40-ton mill is scheduled for the immediate future, and two men will be employed in development work on an eight-hour shift. Matson acquired an interest in the mine from Louis C. Osborne and C. C. Locy.

M. S. Finn, who has been leasing the Sidewinder mine, Victorville, California,

for the past two years, has been shipping ore averaging \$33 a ton to the Burton Brothers mill at Rosamond, California.

Operations are progressing at the San Juan Ramsey Company, Incline, California, and the 10-stamp mill is running 24 hours a day on a good quality of ore, according to A. S. Wyner, manager and general superintendent. A large tonnage has been blocked out and ore is being broken in three different stopes. About 30 tons are crushed daily. Development is proceeding by shaft and drifting. The shaft, which is being sunk from about 500 feet in on the adit level, is now down 600 feet. Drifting north on the fourth level and north and south on the fifth level is bringing operations into new ore bodies. The fourth-level drift has entered satisfactory ore on the downward extension of an ore shoot which is being mined on two levels above. A raise put up in another ore body which had been drifted through on the same level is also showing excellent values. About 30 men are employed. J. H. Elliott is assistant to the manager, G. W. Plantz is mine superintendent, and John F. Emerson is assayer and mill operator.

A 10-ton cyanide plant is being erected at the Turtle mine located 12 miles northeast of Victorville, California, by E. J. (Bert) Corlisa and William Bell, operators. Regular shipments of concentrates averaging \$26 per ton are being made to the Burton Brothers mill at Rosamond, California. Five men are employed at the property.

William A. De Lashmutt, Downieville, California, is working a group of claims on the Middle and North Forks of the Yuba River. He has completed 120 feet of four-foot flume.

Clifford Gillespie of the Cal-Ora Mining Company, 2100 Canyon Drive, Los Angeles, California, has secured an option on the Long Shot group of quartz claims located nine miles north of Danby in San Bernardino County, owned by Maude and Lloyd E. Richardson and Louis J. Rouchelleau.

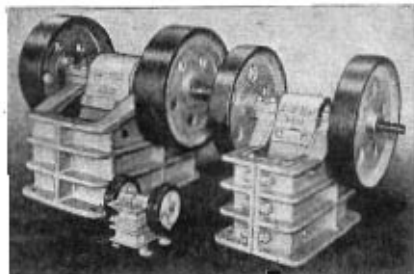
F. R. Croft, Grass Valley, California, has made application for a permit to divert three cubic feet of water per second from Steep Hollow Creek tributary to Bear River for mining and domestic purposes. Estimated cost of the diversion is \$2,000.

F. A. Jones, Sheepranch, California, reports that his 500-foot tunnel in the Douglas Flat mine is rapidly reaching its objective. Recovery of values in development work has paid all operating expenses for the tunnel.

Dave Fairbanks and his son, Ralph, have leased the Louis Kiper property near Baker, California, and are employing four men. A car of ore, which is expected to average \$100 per ton, is ready for shipment.

Carlo S. Morbio, 731 Call Building, San Francisco, California, and associates have optioned the historic Gold Bluff mine near Downieville, California, and an extensive development program is under way at the property. It is planned to carry forward the work which was started last summer in Sailor Ravine and a contract has been let to George R. Costa of Downieville for

HASSELL JAW CRUSHERS



WHERE CAN YOU BUY A ROLLER BEARING CRUSHER FOR LESS?

9" x 16"	\$950.00
8" x 10"	495.00
5" x 6"	225.00
Lab.	65.00

BULLETIN NO. CR 139

HASSELL ENGINEERING COMPANY
ENGINEERS • CONSULTANTS • MANUFACTURERS
COLORADO SPRINGS, COLORADO

For exceptional convenience,
courteous service . . . and
reasonable rates, choose

600
ROOMS
\$2.50
UP

HOTEL PHILADELPHIAN

DANIEL CRAWFORD, Jr., Manager

39th & Chestnut Sts., Philadelphia, Pa.

APACHE POWDER COMPANY

Manufacturers of High Explosives for Domestic and Export Trade. All grades of Gelatin and Ammonia Dynamites. Quarry and Grading Powders. Distributors of Blasting Caps, Electric Detonators, Fuse and Blasting Accessories.

Plant and General Office
BENSON, ARIZONA

Title Guarantee Building
411 West Fifth Street
LOS ANGELES, CALIFORNIA

FLEXIPIPE

The improved flexible tubing for
mine and tunnel ventilation

The original makers of flexible air tubing now offer the latest improvement in flexible tubing design. This is FLEXIPIPE with our new rope seam method of suspension.

Send for free sample and full information.

BEMIS BRO. BAG CO., ST. LOUIS, MO.

Dutch Creek near Junction City, California, have applied for a permit to divert 2.5 cubic feet per second from an unnamed stream tributary to Maxwell Creek for mining and domestic purposes. Estimated cost of the diversion is \$1,000. Work has been completed on construction of a road to the mine and a diversion dam and flume. It is planned to use two hydraulic monitors in working the property.

The shaft at the property of the Alabama California Gold Mines Company, William A. Beaudry, general superintendent, Penryn, California, is being extended to the 1,000-foot level. The three-compartment shaft was recently completed to the 800-foot level. Approximately 300 tons of ore are mined daily on the 350, 500, 650, and 800-foot levels. A total of 800 feet of drifting has been done on the 800-foot level and the vein is said to be strengthening both as to width and values, heads now averaging \$8.50. Approximately 110 men are employed at the mine.

Additional development work is planned for the Puckett Brothers drift gravel mine located on Big Butte Creek 23 miles east of Chico, California. Following a geophysical survey made recently by W. A. Henderson of San Jose, California, it has been decided to extend the drift an additional 800 feet, at which point it is expected to cut the channel. Under the direction of Barney W. Hettel, superintendent, two shifts had driven the tunnel to a depth of 1,300 feet before the channel was lost.

The Stagan Mining Company, Roy Stacy, manager, operating near Jenny Lind, Calaveras County, California, has recently installed a P&H 700-B, 1½-yard dragline. The newly acquired equipment will increase the capacity of the present dry land placer plant. The plant was taken over by Stacy from the Calaveras Properties, Inc., about a year ago.

The old Belmont mine in the Goldstone district near Barstow, California, is now on a production basis, treating 25 tons of \$14 ore daily. The new mill, which was installed under the direction of Charles G. Patrick, mining engineer, 737 North Lafayette Park Place, Los Angeles, California, consists of a crusher, elevator, bin, feeder, ball mill, plates, and classifier in closed circuit, followed by a Groch deep-cell flotation system. Approximately 70 per cent of the gold and silver is recovered in the amalgamation process and an additional \$3.50 in gold and silver is recovered in the flotation cells, leaving a remarkably small tailings loss. The property was recently reopened under a lease arrangement by Art Beale.

A Diesel electric generator is being installed at the Hot Water mine, Graniteville, California, to provide power for operating the mill, pump, compressor, and hoist. Water power is available for eight months of the year and during the balance of the time gasoline is used. The present five-stamp mill is to be enlarged to 10 stamps or more, and buildings are being constructed to house the mill and concentrators. At present the mill is handling 15 tons of gold and silver ore daily. A crew of seven men is employed at the property

under the direction of W. L. Baker, president and general manager, Graniteville. J. L. Jackson is general superintendent and Glen Chapman is chief mechanical engineer. The mine is being worked under lease from the Betty Anne Gold Mining Company.

Hite Mines, Inc., a closed corporation, has been formed to operate the Hite mine located on the south fork of the Merced River 25 miles northeast of Mariposa, California. The mine was formerly operated by Norman Whitmore, 417 South Hill Street, Los Angeles, California, who is also associated with the new company. Compressors and a drill have been installed at the property and ore is being blocked out. Milling operations have not yet been started. K. G. Cole, Box 32, Incline, California, is superintendent at the mine.

Ore tests are being made at the old Jim mine near Graniteville, California, to determine the best method of recovery. The lease on the property, formerly held by Jim Consolidated Mines, Inc., has been taken over by Patricia Jim, Inc.; F. C. Hyers, president, and following the test period, the new operators may decide to install a flotation plant. Hyers is directing work at the mine. Dixon SoRelle is vice-president, and Joseph F. Sauers, 590 North Wilcox Street, Los Angeles, is secretary-treasurer.

Roy F. Rosenbush, owner of the Chloride mine at Dedrick, California, plans the installation of a small jig in the near future to replace a concentration table at the mine. At present an intermediate drift is being run on a 10-inch vein of ore averaging \$25 in gold, and about 2½ tons per day are treated in the amalgamation plant.

Thirty tons of gold ore daily are produced at the Sugarman mine of the Bald Mountain Mines, Inc., Sonora, California, under the direction of Ralph H. Butler, general manager. The 20-ton amalgamation plant is treating six tons daily. A 300-foot drift on the 450-foot level is being extended to cut 10 known ore shoots, and raises have been started on three shoots. Six men are employed.

The El Dorado Crystal mine, Shingle Springs, California, is producing approximately 100 tons of gold-silver ore daily, which is treated in the 125-ton cyanide plant. A crew of 55 men is employed under the direction of Benoni Lockwood, Jr., mine superintendent, and William A. Crowfoot, mill superintendent, both of Placerville, California. Joseph David, Placerville, is mine foreman; George Loram, Placerville, is assayer; and Charles M. Geller, Shingle Springs, is chief electrician and mechanical engineer.

Ore sampling \$70 per ton in gold is reported to have been encountered on the 3,100-foot level of the Sheepbranch mine, Sheepbranch, California, operated by the St. Joseph Lead Company. A wide vein is reported to be in sight and it is understood that the company is considering plans for sinking the shaft to the 3,500-foot level. Four miles of open flume have been replaced by a pipe line, a powerful pump has been installed at the 300-foot level, and other improvements have been completed. A crew of 200 men is employed

the first unit of this work. Air pipe and compressor equipment are being installed at the Sailor Ravine tunnel and it is planned to have work on a two-shift basis soon. The geology of the property is being studied by Charles Higdon, who will act as consulting engineer on the present project. The mine was formerly operated on a large scale by L. Rosenfeld but since his death in 1915 the property has been idle.

Buildings and equipment of the Red Mountain Mining Company near Red Mountain, California, are being sold. The company has made several attempts to recover values from tailings and after disposing of the old equipment, will give further study to methods necessary for successful recovery. Harley A. Sill, 1011 South Figueroa Street, Los Angeles, is consulting engineer.

The St. Joseph Lead Company, 250 Park Avenue, New York City, reported for the six months ended June 30, 1939, a net income of \$1,415,028, after deductions for depreciation, depletion, and federal income taxes. This compares with \$46,185 for the same period of 1938. During the first six months of 1939 lead production totaled 62,994 tons, as compared with 47,406 tons in the like 1938 period. The average lead selling price per pound was 4.625 cents, compared with 4.391 last year. The company, with its subsidiaries, is understood to be the largest producer of lead ore in the United States and is one of the principal sellers of pig lead produced from domestic ores.

California-Hidden Treasure Mines Company's old 200-ton Kansas mill at Nevada-ville in Gilpin County near Idaho Springs,

COLORADO

Colorado, is being remodeled by LeRoy M. Otis of Central City and associates, lessees. It will treat the company's old mine dumps in that vicinity by flotation and amalgamation. The company is producing a small amount of ore from its Monmouth-Kansas mine in order to defray the expense of maintaining the 22,000-foot Argo tunnel. Eventual plans of the company call for the reopening of the Western portions of the Gilpin district through the Argo tunnel. George E. Collins, 307 Boston Building, Denver, Colorado, is one of the officials of the company.

About 10 tons of silver ore are being produced daily from the Fredonia mine near Breckenridge, Colorado, where six men are employed. Melvin Brugger, 1102 East Platte Avenue, Colorado Springs, is consulting engineer and D. F. Miner of Breckenridge is general superintendent. Jack Mave, Breckenridge, is mine superintendent. The property is held under lease from the Ore Producers Company.

Connections are being made to the Shurtloff shaft by the Golden Conqueror Mines, Inc., at Cripple Creek, Colorado. The company, headed by A. de Marconnay of Manitou, employs 50 men and produces about 125 tons of gold ore daily. Plans call for the laying of one-half mile of railroad spur, construction of a new headframe, ore bins,

and hoist house, and the installation of a hoist. Albert S. Konselman, Manitou, is consulting engineer and A. W. Deaner, Box 14, Cripple Creek, is mine superintendent.

Both production and development work are being carried on in the property of the Golden Swan Mining Company which is employing a crew of 11 men at its Gold Bond mine, Cripple Creek, Colorado. Wilbur G. Hanes, Box 312, Colorado Springs, is president and Carl Bredenberg, Box 176, Cripple Creek, is general manager. Between 15 and 20 tons of gold ore are being shipped daily.

Work has been resumed at the Amanda gold mines at Cripple Creek, Colorado, by lessees who are developing and producing ore. C. F. H. Krug, 2718 Woodburn Avenue, Cincinnati, Ohio, is general manager and M. F. Gerard, Box 61, Cripple Creek, is mine superintendent. Robert E. Landon, Colorado Springs, is chief geologist.

The Trail Run Mines, Inc., 411 North Seventh Street, St. Louis, Missouri, expects to resume operations within a few weeks. The company, Charles Gresser, Maryland Hotel, St. Louis, president, owns the Wheatland mine in the Trail Creek district of Clear Creek County near Idaho Springs, Colorado. C. R. Wilfley, 1948 Broadway, Denver, who was in charge of operations last year, will again direct the work.

Mineral jig, flotation cells, and a hoist are to be installed at the Bullion mine near Montezuma, Colorado, by G. W. Goodman

of Montezuma, who operates the property under lease from the Golden Cycle Corporation. From 15 to 20 tons of silver, lead, and copper ore are being produced daily. The mill has a 50-ton daily capacity. Recent mine development includes a 100-foot drift on the Yellow Jacket vein and a raise from the 185-foot level to the 110-foot level. Six men are employed.

The Emperius Mining Company, B. T. Poxson, 695 Locust Street, Denver, Colorado, president and general manager, is producing 50 tons of mill-grade ore and 25 tons of high-grade daily. Values are in silver, gold, and lead. George H. Garrey, 1555 Sherman Street, Denver, is consulting engineer and chief geologist. E. W. Nelson of Creede is general superintendent and purchasing agent. The property, known as the Last Chance-New York and Del Monte mines, is at Creede, Colorado, and is opened to a depth of 1,200 feet. A crew of 45 men is employed.

A 25-ton mill at the Donald R. workings is planned by the Columbus Gold Mines Company at Gold Hill, Colorado, A. E. Reardon, Box 925, Gold Hill, president and general manager. Ore values are in gold, silver, and lead. The property, held under lease and option from the Trio Mining Company, has been opened to a depth of 300 feet. The Donald R. tunnel has been driven 600 feet on the Columbus vein and the Donald R. shaft is 150 feet deep. The Columbus No. 2 shaft has been rehabilitated to the 150-foot level and the other 150

YOU'LL BE

Rolling Along to Lower Costs

WHEN YOU USE COLORADO STEEL PRODUCTS

CFI The Colorado Fuel and Iron Corporation

GENERAL OFFICES: DENVER, COLORADO STEEL WORKS: PUEBLO, COLORADO

The A. M. C. Convention in Salt Lake City

THE MANY prominent mining men who assembled in Salt Lake City for the Sixth Annual Convention and Exposition of the Western Division, American Mining Congress, were

in a much better frame of mind than they were when they met in the same city two years ago. Many of the conditions criticized at that time have either been corrected entirely or to a considerable extent modified, but the miners were nevertheless bitter in their denunciation of certain New Deal laws and their administration, particularly the Wagner Act and the Wage-and-Hour Law.



Howard I. Young

While the delegates had only caustic criticism for the National Labor Relations Board, the body that administers the Wagner Act, little fault was found with the Wage-and-Hour Division of the United States Department of Labor whose job it is to enforce the wage-and-hour law, and which was commended by the delegates for its cooperative spirit. Among other things, the men were told:

1. Neither the mining industry nor the nation itself can profit by war—yet liberty, justice, and the dignity of mankind are more precious than peace.

2. Officials hope the Strategic Materials Act will mark the beginning of a long-range program which will make the nation self-sufficient in minerals, either through domestic production or stored supplies.

3. We consume half the world's supply of tin and 40 per cent of the nickel produced, yet in neither case do we produce 1 per cent of our needs.

4. The government is spending six or seven million dollars to rehabilitate the billion-dollar California hydraulic mining industry.

5. The silver victory was won because mining men stood together for the first time.

6. Advances in mining practice have been retarded by excessive and punitive taxation, government interference with enterprise, and a questionable fiscal policy.

7. One of the newest developments in mining is a close-coupled radio system for shaft signaling between the cager and hoist engineer which has been developed and placed in successful operation at the Homestake mine.

8. Improvements in truck tire manufacture have permitted great savings and con-

*Research Editor, The Mining Journal

Mining men at the annual convention of the Western Division, American Mining Congress, in Salt Lake City late last month gave their attention primarily to labor relations, federal taxation and the budget, and to the government's tariff and monetary policies. A number of corrective steps were urged which can only be obtained by the full cooperation of all engaged in the industry.

tributed to the widespread use of trucks at such operations as the Morenci Open Pit mine.

9. The Wagner Act is an instrument of discord and class strife which does not conduce to harmonious relationship between men and management.

10. There should be a redefinition of the term "interstate commerce" so that state's rights may be established.

11. There were 4,000 pages of transcript in the case of the Sunshine Mining Company which was charged with violation of the Wagner labor relations act. They cost 44 cents a page.

12. Occupational disease legislation should be handled by state and not by federal legislation.

13. Prevention is the only reliable means of combating silicosis.

14. The tariff has as direct an influence on American labor as do the immigration laws.

15. SEC policies have stifled mining in an effort to prevent dishonest stock promotions.

16. There is no such thing as a simple revenue act.

17. The time will come when federal expenditures will be reduced of necessity—when government cannot borrow funds to finance a deficit.

18. The Wage-and-Hour division has received no communication from employes demanding that the wage-and-hour law be repealed or drastically amended.

19. The enactment of such laws as the Wage-and-Hour Law should be left to state governments which know local working conditions better and which can draft bills better adapted to their own peculiar needs.

BEFORE leaving Salt Lake City, the men recommended to Congress in the form of resolutions:

1. Repeal of the Wage-and-Hour Law.
2. Amendment of the Wagner Act "to prevent coercion from any source."

3. Cessation of government competition with private industry.

4. Substantial reductions in income, capital gains, and estate taxes.

5. A revised Congressional budget procedure.

6. Senate ratification of trade agreements.

7. A bi-metallic instead of a managed currency.

8. Permission to mine in national parks.

Howard I. Young, president of the American Mining Congress, in an informal talk shortly before the opening of the convention expressed the sentiments of all men in attendance when he said: "The question of defense is the number one thought in the minds of the industry now. The industry is cooperating fully with the government on any defense program involving materials.

"Neither the mining industry nor this nation can profit by war," he declared. "The industry does not want war. It knows about the disorganized markets and operations that follow in the wake of war and knows this disorganization is very costly. There is then no normal market."



Louis S. Cates

Louis S. Cates, president of Phelps Dodge Corporation, expressed a similar view when he said, "Not by war, but by normal business improvement and reorganization do mining men wish to see their business improve. War will decidedly help the copper industry, but I sincerely hope we do not have a conflict."

IN VIEW of the critical European situation, the first session was devoted to minerals and national defense with particular emphasis on strategic minerals. The meeting was opened by Julian D. Conover, secretary of the American Mining Congress, who pointed out the necessity of cooperating with Congress in order to meet the new problems which have been raised and to cope with the old ones which have reappeared in new form.

"This meeting," he said, "is of vital importance to the industry. It gives us an opportunity to take council among ourselves and exchange viewpoints regarding the problems that face us and plan a campaign to correct them."

The chairman of the session was William Loach, vice-president and general manager of the Wolf Tongue Mining Company, Denver, Colorado. He was well qualified to

preside at the session inasmuch as his company is a producer of one of our most important strategic materials, tungsten.



John W. Finch

Mines has no funds with which to purchase either strategic or critical materials. "Producers in a position to supply minerals for stock-pile purposes," Dr. Finch said, "should address inquiries to the treasury department, attention of the procurement division."

The speaker went on to say, "I want to emphasize particularly that this act does not authorize loans or grants to owners of deposits of strategic materials. The government is not concerned with the development of private property for private benefit, but we hope our work will stimulate mining activity."

Finch stated that the act specifically provides for the exploration and development on public lands and private lands, with the consent of the owner, deposits of strategic and critical materials by such methods as are necessary to determine the extent and quality of the deposits and the most suitable methods of mining and beneficiating them. He stated:

"The policy of the bureau of mines in selecting projects for investigation is governed by the intent of the act as expressed in the words, 'to provide for the common defense.' Therefore, projects are being selected on a broad, national basis without reference to their possible local effect, and state and district boundaries are ignored."

He said that the investigations of the bureau will be of two different but interdependent kinds and will be handled by two different divisions working in close cooperation. Prospecting and exploration will be handled by the mining division while investigations into the beneficiation of ores and mineral substances found will be conducted by the metallurgical division.

The investigations of mineral deposits will be limited to surface work and underground exploration to moderate depths, inasmuch as funds available are inadequate to accomplish extensive development. Finch pointed out that the bureau of mines is being guided by the geological survey in selecting deposits for examination and that the survey will cooperate with the bureau by observing disclosures made on each project and aiding in the interpretation of them.

The speaker declared that this country's strategic mineral position has been improved in some fields and aggravated in others since the World War. Particularly, the nation's dependence on manganese,

chromium, and nickel from foreign sources has increased because of the extensive use of alloys. On the other hand, we are no longer vitally dependent on Chile for nitrates and we produce a large part of our requirements of potash, platinum, molybdenum, pyrite, antimony, and sulphur, although we had to import them during the last war.

He expressed the hope that the strategic materials act will mark the beginning of a long-range program which will make the nation self-sufficient in minerals, either through domestic production or through stored supplies. "The bureau is not looking for small, high-grade deposits," Finch asserted, "but rather large deposits, although low in grade, that will supply a large tonnage."

"It is planned tentatively to publish progress reports from time to time during the course of the investigations, as information is gained that may be of public interest, and the final reports will be published jointly by the bureau of mines and geological survey summing up the different phases of the problem—geological, mining, metallurgical, and economic."

THE PAPER prepared by D. F. Hewett, chief, metalliferous deposits, United States Geological Survey, on the subject of domestic sources of deficient materials was read by Howard I. Smith, chief of the U. S. G. S. mineral leasing division. Hewett sounded a note of alarm by stating that minerals are a wasting asset and that advances in technology will not necessarily prevent us from facing a shortage or scarcity of minerals in this country.

He said that the people of the United States, "accustomed to an abundance of many things," until relatively recently did not concede or adapt themselves to the idea of a scarcity of some things. "In my opinion, the war from 1914 to 1918 not only revealed these deficiencies clearly, but the efforts to obtain these metals gave the first aspects of a clear picture of the nature and the limitation of our supplies."

Eight metals, tin, nickel, manganese, chromium, tungsten, mercury, antimony, and aluminum, were discussed in detail as being deserving of greatest consideration, and the problems regarding each of them were briefly summarized.

"Tin should be considered first," he declared, "because we consume half the world's supply and yet we produce less than 1 per cent of our needs." There are 10 districts in the United States in which tin has been found in appreciable quantities, but it has not yet been proved that any are rich enough or extensive enough to be worked at a profit at present prices.

"Next to tin comes nickel of which we consume 40 per cent of the world's supply but produce only

0.5 per cent of our consumption." He observed that the known deposits in the United States carrying reasonable quantities of the metal are relatively small and that the metal which is produced here is recovered in the refining of other metals such as copper.

More information is possessed about our resources and the geologic problems of manganese than any other of the strategic materials, according to Hewett. The geological survey has records of about 1,500 mines and deposits of the metal in the United States, but increased output depends upon improvements in mining, milling, and metallurgic technique to permit commercial exploitation of our known large, low-grade deposits.

In regard to chromite, Hewett pointed out that while war-time prices have brought out great demand, the deposits are all small although it is possible that larger occurrences may be located. Similarly, the war-time demand brought out a good production of tungsten and the deposits revealed at that time now constitute our main source of supply.

A detailed study will be made of antimony deposits in this country by the survey, it was stated, in the hope that it will throw light on the extent and distribution of the deposits. Our production of both mercury and bauxite has passed its zenith, according to studies of past output.

"Extensive reconnaissance examination work," Hewett concluded, "will be conducted in cooperation with the engineers of the bureau of mines to guide their programs of exploration. I feel sure that the program of work that we are planning will clear up many uncertainties concerning our reserves of strategic minerals."

The concluding speaker of the first session was George W. Hallock, president of the California Hydraulic Mining Association. He traced the development of hydraulic mining in California to its zenith, reached in 1870 or 1871, and then its downfall after the Sawyer injunction enjoining the placing of mining debris in water courses tributary to navigable streams in 1884.

A "gesture of conciliation" was made in 1893 when the Caminetti Act was passed by Congress "whereby it was proposed to license hydraulic mining subject to certain important restrictions—principally the keeping of tailings from stream beds—and created the California Debris Commission composed of army engineers.

Hallock continued saying that it was not until 40 years later that any comprehensive attempt was made to apply the act in principle to the rejuvenation of the industry that it sought to preserve because the erection of restraining dams could not be financed. Hallock credited Harry L. Engelbright, congressman from California's second congressional district, and Ex-President Hoover primarily for obtaining authorization from the federal government, both legislative and executive, whereby the government was to build the necessary works and "look to the miners" for the return, over a period of years, of its investment in the form of storage tolls.



James W. Wade

Four such restraining dams were provided for at an estimated cost of \$7,500,000 and of the four, the North Fork Dam on the American River, with a storage capacity of 27,700,000 cubic yards, has been completed. The Upper Narrows Dam on the Yuba River, with a capacity of 136,500,000 yards, is under construction and the contract for the Ruck-a-Chucky Dam on the Middle Fork of the American River has just been let. It will have a capacity of 28,100,000 cubic yards. The Bear River project is still indefinite.

"For months before construction was started," Hallock stated, "success or failure rested with the little group of workers of the California Hydraulic Mining Association. Scores of properly signed and verified guarantees had to be brought in and they were brought in and finally accepted—and today form the keystone of a project whereby the government is spending some six or seven million dollars to rehabilitate an industry which official estimates rate as well above the billion dollar figure."

THE convention delegates were welcomed to Salt Lake City at the luncheon meeting at Hotel Newhouse by Governor Blood, who stressed the importance of the mining industry in the west, and by Mayor Wallace who said:

"Mining is a matter not to be left entirely to mining men and companies. It is a matter of importance to be considered by state and local planners in order to further develop it."

The two officials were introduced by James W. Wade, general chairman of arrangements, who served as toastmaster. Howard I. Young, president of the American Mining Congress, expressed appreciation of the warm reception and declared: "Mining is united as never before in a cooperative program essential to the continuation of the industry." Others introduced included George H. Rupp, who thanked the various committees for their work; Roy L. Cox, who pointed out the educational value of the exposition; and David D. Moffat, who observed that it was gratifying to see in attendance the men largely responsible for the nation's non-ferrous metal mining.

The principal speaker was Senator William H. King of Utah and with his talk the attention of the delegates turned once again to the European situation. In speaking of the policy the United States government should pursue in the face of war, he said: "There are some things in life more precious than peace—such as liberty, justice, and the dignity of mankind."

The second session, on Monday afternoon, consisted of talks on the current status and outlook for non-ferrous metals, a feature which was begun successfully a year ago. Stanly A. Easton, president of Bunker Hill and Sullivan Mining and Con-



R. C. Allen

Allen, president, Lake Superior Iron Ore Association, who presented a paper on iron ore; and Merrill E. Shoup, president, Golden Cycle Corporation, who spoke on gold. Other metals and non-metallic minerals were discussed by Charles H. Segerstrom, president, Nevada Massachusetts Company.

The speakers as a whole predicted slight increases in consumptive demand during the next few months, but they would have undoubtedly predicted much greater increases had they known that the outbreak of war was a matter of a few days away.

The speech of Senator Pittman of Nevada on the subject of silver was listened to with great interest because of the successful campaign conducted in Congress last session for a higher and stable price of the metal.

Pittman, speaking on the future of silver, declared that the bill enacted by the last session of Congress had freed the metal from the whims of bureaucrats for the first time in 68 years. By retaining in Congress sole authority to change the price of the metal, he said, a situation has been created whereby it will be virtually impossible to reduce the present 71.11-cent price.

"There are," he observed, "at least 22 members in the Senate who will talk 22 years before they will permit the law to be changed to reduce that price. It is not a high price. It is not the natural price. But it is a price fixed by law."

It was because mining men stood together, Pittman asserted, that the silver victory was obtained.

Pittman firmly insisted that there is no danger of silver inflation, stating that the maximum silver issue now would be about \$3,500,000,000 and that it would take another 21 years to add another billion dollars to the supply from domestic production.

On the subject of managed currency he said, "Currency must be managed, but it should be managed on a gold and silver basis. We should have a constitutional money—a money backed 100 per cent by a metallic base and which is not recallable.

centrating Company, was chairman and introduced P. G. Beckett, vice-president of Phelps Dodge Corporation, who spoke on copper; Andrew Fletcher, vice-president, St. Joseph Lead Company, who gave a talk on lead; Edward H. Snyder, general manager, Combined Metals Reduction Company, who covered the subject of zinc; R. C.



Chas. H. Segerstrom

In conclusion he commented, "Our job last session was economic. We had to demonstrate that a reduction in the silver price did aggravate unemployment. But next session it will be a monetary battle."

"We are not finished yet. Our ultimate goal is \$1.29 an ounce, the price at which the government pays its own debts. I can see no reason why the government should hi-jack 45 per cent of the price of silver."

THE Tuesday morning session was devoted to operating problems in the industry with Guy N. Bjorge, general manager of Homestake Mining Company, presiding. New equipment and improved practice in metal mining and progress in milling practice were discussed as well as the Morenci Open Pit mine where a tremendous development program is now in progress and where many improvements are being made as a result of preliminary experimental work.

On the subject of improved metal mining practices, Lucien Eaton, mining engineer of Milton, Massachusetts, commented that, "Advances in mining practice and equipment have been retarded by all those forces that have deterred the investment of private capital—excessive and punitive taxation, government interference with private enterprise, a bad labor situation, and a questionable fiscal policy. . . . Except in gold mining relatively few properties have been opened and equipped and new construction has been mostly in the line of improvements at existing plants. As a consequence new ideas have been put in practice slowly."

Such developments as the greater use of trucks in place of locomotives in open-pit mining, electrically driven shovels, scrapers and scraper-hoists, the use of larger churn drill holes in blasting, and improvements in powder and fuse were mentioned. In regard to developments in underground mining, particular emphasis was placed on the trend toward more selective mining which is done by the more careful placing of holes.

Other underground mining developments include the "long-slope" method of mining, in which sublevels are inclined about 35 degrees from the horizontal so that ore will be removed by gravity; "ring drilling" for greater safety and more efficient blasting; shaft sinking by means of giant bore holes; the increased use of alloys to reduce weight of hoisting equipment; the use of preformed wire ropes; a new master fuse lighter; the Gardner-Denver and Sullivan loaders; faster drilling machines with automatic feed and a tendency toward higher air pressures; increased use of detachable bits; widespread use of electric lamps; improvements in underground lighting; controlled ventilation; and the air conditioning of deep mines.

Eaton's statement that, "Since the expiration of the Finlay patents, the Gardner-Denver Company and the Sullivan Machinery Company have put on the market loaders similar in general design," was immediately challenged by M. S. Rosenblatt, vice-president and general manager of Eimco Corporation. Rosenblatt pointed out



Merrill E. Shoup

Concentrates from Western States

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

The new tailings pump system of Tom Reed Gold Mines Company, Oatman, Arizona, has been completed and placed in operation. The system consists of a dragline, a four-squared hopper puddling tank, and a Wemco sand apparatus. A one-half-mile pipe line has been installed, through which the tailings will be pumped to the Number 1 agitator. They will then be pumped direct to the mill for treatment before being run through the cyanide process.



The Shattuck Denn Mining Corporation, Thomas Bardon, president, 120 Broadway, New York City, reports a net income of \$98,519 before depletion and income taxes for the six months ended June 30, 1939. The Denn mine at Bisbee, Arizona, operated continuously during the period and produced 6,630,280 pounds of copper, 3,355 ounces of gold and 106,636 ounces of silver. Development work was done on the 1,100, 2,300, 2,430, 2,565, and 2,680-foot levels. Minor extensions of known ore bodies and some additional lenses of ore were disclosed but no important discoveries of ore were made during the period. On February 20 a distribution of 12½ cents a share was paid to stockholders of record January 31. J. A. Wilcox, Box 1431, Bisbee, is superintendent of the mine.

Alfred Packard, A. M. Packard, and Whit Skinner are working a vein located on the Fairground claim which is held under lease from Bill Wilbank of Payson, Arizona. They have sunk a 35-foot shaft on the vein and have stoped almost to the surface on one side. The bottom of the shaft is beginning to show values in copper in addition to the gold. Water is also being encountered, however. A small amalgamation plant is operated, treating about 1½ tons of ore in eight hours. The ore has ranged in value from \$20 to \$160 a ton.

A surface camp has been completed at the Zulu mine, Payson, Arizona, a 40-foot headframe has been constructed, and excavations are being made for machinery foundations. A hoist and compressor are already on the ground. It is planned to unwater the shaft, sink to greater depth, and do additional drifting along unexplored portions of the vein. A mill will be installed if development warrants. A shoot of high-grade ore has been opened on the 50-foot level but its extent has not yet been determined. A crew of about 10 men is employed. The mine is owned by Walter L. Lovelady, Payson, and is under lease to Dr. W. E. Williams of Hollywood, California. Operations at the property are directed by Roy Berry of Los Angeles, California.

Equipment is on the ground for a 25-ton mill to be installed at the Bobtail mine

located 15 miles from Globe, Arizona. It is planned to have the plant ready for operation by February. A new shaft is being sunk 100 feet. The mine is owned by T. T. Leonard of Silverton, Oregon, and is being operated by Carl H. Foerester and John J. Belcher, Route 1, Globe.

Both mining and milling operations were resumed August 21 at the New Cornelia Branch, Phelps Dodge Corporation, Ajo, Arizona, following the three weeks' vacation period. Work remains on the same basis as before the shutdown, with two shifts employed at the mine and a total crew of about 1,150 men. M. Curley is manager of the New Cornelia Branch.

The 100-ton Oro Plata mill is operating steadily on ore from the Oro Plata and Golden Eagle mines, located in the Cerbat Mountains 16 miles north of Kingman, Arizona. Regular shipments of concentrates are being made at the rate of 100 to 150 tons monthly. Ogden C. Chase, Kingman, is general manager. Gus Ballard, Kingman, is mine superintendent, and A. C. Dundas, Chloride, Arizona, is directing mill operations. It is planned to re-equip the Peach crosscut at the Oro Plata, which has been driven 2,600 feet to the vein and 300 feet on the vein; and the shaft will also be sunk from 280 feet to 480 feet. At the Golden Eagle a new 500-foot shaft will be sunk with crosscuts and drifts at 100-foot intervals. Later it is planned to install a 500-ton mill to treat Golden Eagle ore, leaving the present plant for exclusive treatment of Oro Plata ore. The properties are being operated by Harry C. Howell, 801 First National Bank Building, Davenport, Iowa.

A. W. Clapp, Kingman, Arizona, and A. C. Dundas, Chloride, Arizona, will place in operation a 50-ton gravity concentration, amalgamation, flotation plant at Cerbat. The mill will be operated on known bodies of ore in the Golden Gem mine.

K. D. Terrell, Mayer, Arizona, has been granted a permit to appropriate from Grapevine Creek 182,500 gallons of water annually for domestic use, 30 acre feet annually for irrigation, and 750,000,000 gallons per year for mining.



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.

Nine men are employed at the Moss mine located about 10 miles from Oatman, Arizona, and present work consists of retimbering the main shaft and installation of new machinery. The mine was recently taken over by a new company.

A carload shipment of ore was made recently from the Woodchopper mine in Mineral Park, which is a portion of the Evahom mine operated by J. E. Mitchell of Essex, California.

The Mohawk mine located in the Union Basin district of Mohave County is being actively developed with a crew of eight men employed. Gold-silver ore of shipping grade is being extracted. The property is held by James Beauchamp of Kingman, Arizona.

A small test plant has been installed at the Merrill placers, Octave, Arizona, by H. J. Grover, owner, and a churn drill is being used to locate a water supply.

Forest V. Phillips, secretary and manager of Alpha-Keystone Mines, Inc., Box 991, Kingman, Arizona, has been in San Francisco recently, where he has been conferring with E. H. Snyder, president of Snyder Mines, Inc., Box 132, Stockton, Utah; officials of the Union Pacific Railroad; and Las Vegas, Nevada, capitalists, with a view to installing a smelter and electrolytic plant near Boulder City, Nevada, for the recovery of zinc. Phillips has agreed to contract the entire production of Keystone mines and mill to the proposed smelter and upon his return to Kingman he will make a study of the ore and concentrate situation in the Chloride district. If the plans work out, Alpha-Keystone proposes to extend the Cashier tunnel from 2,000 feet to 4,000 feet with a view to intersecting the Cashier, Alpha, and Summit veins, all of which are being worked. The mill will also be moved to the mouth of the Cashier tunnel and enlarged from its present capacity of 150 tons to 250 tons daily.

Mrs. E. M. Jackson, Box 1181, Benson, Arizona, is operating the Golden Rule mine three miles east of Dragoon, Arizona, under a cooperative leasing arrangement. Six men are working at the mine and Matt Lee, Dragoon, is mine superintendent. The property is equipped with a 10-stamp mill, amalgamating plates, and concentrating table. The road to the mine has recently been repaired and the mill has been reconditioned.

The Gold Mountain Mining and Development Company, Big Bear City, California, which recently bonded the old Lucky Baldwin mine near Lake Baldwin, San Bernardino County, California, is engaged in preparing the property for production. The air compressor and triplex Gould pump have been installed,

and primary and secondary ore bins of approximately 200 tons capacity are practically completed. The assay office and blacksmith shops have been built and the cement foundation for the mill is awaiting the machinery. Contract for the milling



equipment was completed recently with the American Engineering and Machinery Company, Long Beach Avenue, Los Angeles, California. The plant will consist of an 80-ton rod mill, crushers, rolls, jig, and Gibson amalgamator. A 6,000-foot pipe line from Lake Baldwin will be installed also. Workmen are now opening up the 800-foot tunnel, from which early-day production came. The main source of ore, however, will be the exposed vein measuring approximately 40 feet, which it is planned to work by the open cut method. The Gold Mountain company is composed of three general partners, F. Tyler Daniels, Fred E. Cline, and A. W. Meier. John F. Wood is general manager of the company.

The American Potash and Chemical Corporation, A. A. Hoffman, California manager, Trona, California, is now operating its new sulphate of potash plant, which was built this year. The corporation has also constructed an addition to the Trona school, a new community church, and 10 houses for employes during 1939. An average of 1,200 tons is treated daily, from which is produced potash, borax, boric acid, pyrobor, soda ash, and salt cake. Approximately 900 men are employed at the property. Operating officials include: W. W. Lynch, assistant California manager; F. R. Bridgeford, plant superintendent; A. J. Anderson, assistant plant superintendent; J. J. Eason, chief engineer; W. J. Libbey, assistant chief engineer; W. H. Allen, development and power engineer; M. W. Colony, mechanical engineer; F. A. Ferris, master mechanic; R. M. Durland, control chemist; M. E. Franklin, purchasing agent; Fred Austin, safety inspector. Department managers include: P. L. Hollingsworth, traffic; L. S. Laughlin, industrial relations; W. A. Gale, research; F. J. Knoepfel, auditor; W. L. Denton, M. D., medical director; M. H. Porter, labor relations. The corporation is headed by H. S. Emlaw, 70 Pine Street, New York City.

Twelve men are employed at the Harvard gold mine, Jamestown, California, under the direction of P. R. Bradley, Jr., general manager, Jamestown. J. A. Hamner is mine superintendent. The mine is under option to the Alaska Juneau Gold Mining Company, P. R. Bradley, president, 1022 Crocker Building, San Francisco, California, and extensive tests are being made. A test run of about 1,300 tons of ore will be made at the Pine Tree mill in Bear Valley, California.

Work is to begin immediately on construction of 2½ miles of road for the Lucky Boy mine near Hornbrook, California, owned and operated by the Butler Mining Corporation, E. L. Spencer, president and general manager, 403 Benjamin Franklin Life Building, Santa Barbara, California. Upon completion of the road a new compressor is to be purchased for the mine. Other new equipment planned for the property includes a jig and table, small ball mill, and a pump. Work at the property is directed by Louis R. Ball, general superintendent, Box 141, Hornbrook. Operating officials include Oscar Sundin, mine superintendent; C. A. Dailey, mill superintendent; William Schweers, safety



inspector; and Ernest T. Yee, chief clerk. Eleven men are employed.

The Yellow Metal mine on Saxon Creek near Mariposa, California, has recently been reconditioned for operation and 2½ miles of road have been built to the property to facilitate transportation. A small pilot mill has been improved and additional equipment installed to permit immediate milling of high-grade ore while larger ore bodies are being developed. Drifting will be continued on one fairly flat lying vein to the intersection of the other steeper veins apparently responsible for the large ore shoot. These veins run from three to seven feet in width at the 100-foot level and average \$7.50 per ton where they are now accessible. The mine was worked in the early days and is said to have a production record of many thousands of dollars. The property is owned by the Jeffrey Investment Company, 7041 Thornhill Drive, Oakland, California, which holds several mining properties. Vernon L. Jeffrey is manager of the company with headquarters at Mariposa.

Milling of gold ore has been resumed at the Standart mine of the Indian Valley Mining Company, Greenville, California. The company recently completed construction of a new 150-ton, all-steel flotation plant to replace a plant of the same capacity destroyed by fire early this year. The Standart, an old producer, has been under development by the Indian Valley company for the past five years and large re-

serves of ore are reported to be available. Exploration of territory beyond the main workings is also reported to have disclosed satisfactory values. About 40 men are employed at the mine under the direction of Gus L. Johnson, general manager. Robert Clarkson is mill superintendent, and William O. Cox is mine superintendent. C. L. Hibbard, 1210 Western Avenue, Seattle, Washington, is president of the company. The mill was installed by the Miners Foundry and Supply Company of Nevada City, California.

A crew of six men is engaged in preparing the lower bar at the old Stenshaw mine near Somesbar, California, for development. Equipment has been moved to the new location and it is planned to handle about 60 yards of gravel an hour. During the regular mining season work was concentrated on the upper channel. Operations are carried on by means of a dragline, and a Pan-American jig is used in the recovery process. The property is being worked by the Stenshaw-on-Klamath Gold Mining Corporation, B. W. Delgass, vice-president and general manager, Somesbar, California.

Yuba Consolidated Gold Fields, Ltd., F. C. Van Deirse, vice-president in charge of operations, 351 California Street, San Francisco, California, has leased 35 acres of river bottom land near Gridley for dredging purposes. The ground was leased from Samuel H. Fillmore and J. O. Jones.

Work has been resumed at the property of the Roseklip Mines Company, Henry S. Sweet, general superintendent, Bodie, California, following installation of a larger and more modern mill. The property was shut down for several weeks to facilitate installation of the new equipment. The balance of the mill machinery was also repaired during the shutdown. The new unit will permit the treatment of 300 tons of ore daily.

Work has been started on construction of a two-mile power line to connect the Ortega mine with the Pacific Gas and Electric Company line. The mine located near Mariposa, California, was taken over recently by E. R. Baker and associates. The mine is being prepared for active development and the 25-ton mill is also being rehabilitated to permit treatment of development ore.

The Aura mine on Frazer Mountain in the Piru mining district is being operated under lease by Gill and Bray of Acton, California. They plan to build a road to the property and install a 20-ton mill within the next 90 days. The Aura was formerly known as the White Mule.

C. D. Ross and associates are preparing the old Warden Ranch property above Downieville, California, for hydraulicking. Approximately eight tons of equipment will be moved in to the property, including hydraulic pipe, etc. Work is expected to begin about November 1.

Extraction of gold and silver ore assaying \$70 per ton from the Bonanza, Boulder, Tonopah, and White Star claims will warrant a 25-ton increase in the capacity of the Cactus mill, according to Frank

AVERAGE PRICES OF METALS
(Figures by American Metal Market)

	Copper	Lead	Zinc	Silver
	Per Lb.	Per Lb.	Per Lb.	Per Oz.
	Conn. Valley	New York	St. Louis	New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.622	69.065
1926	13.795	8.417	7.887	62.107
1927	12.920	6.765	6.242	56.870
1928	14.570	6.305	6.027	58.176
1929	18.107	6.888	6.512	52.993
1930	12.982	5.517	4.656	38.154
1931	8.369	4.244	3.638	28.701
1932	5.792	3.181	2.881	27.892
1933	7.276	3.870	4.031	34.728
1934	8.668	3.8595	4.162	47.973
1935	8.880	4.0648	4.331	64.273
1936	9.710	4.7001	4.903	46.088
1937	13.391	6.0085	6.517	44.805
1938	10.225	4.7388	4.613	43.222
1938				
Jan.	10.425	4.870	5.00	44.714
Feb.	10.00	4.6318	4.816	44.75
Mar.	10.00	4.50	4.413	44.446
Apr.	10.00	4.50	4.165	42.75
May	9.60	4.40	4.043	42.75
June	9.00	4.1481	4.143	42.75
July	9.810	4.882	4.75	42.75
Aug.	10.125	4.90	4.75	42.75
Sept.	10.255	5.00	4.855	42.75
Oct.	10.981	5.10	5.015	42.75
Nov.	11.25	5.0913	4.913	42.75
Dec.	11.25	4.8423	4.50	42.75
Ave. 1938	10.225	4.7388	4.613	43.222
1939				
Jan.	11.25	4.826	4.676	42.75
Feb.	11.25	4.8045	4.50	42.75
Mar.	11.25	4.8241	4.50	42.75
Apr.	10.469	4.782	4.50	42.75
May	10.058	4.75	4.50	42.75
June	10.00	4.80	4.50	41.955
July	10.220	4.854	4.517	34.944
Aug.	10.491	5.0426	4.724	35.951

Ralston, Olancho, California, co-lessee of the property. The present plant has a capacity of 10 tons. Ralston and John Paterson have mined and milled approximately 50 tons of ore from the property. The mine is located in Cactus Flats near the Haiwee dam.

Frank Reilly has leased the Bunker Hill mine near La Porte, California, and is preparing to operate throughout the winter. A new water system has been installed and the tunnel retimbered to a depth of more than 2,000 feet. It is planned to lay new track, and the buildings will be repaired to withstand the winter. Reilly and associates worked a portion of the Bunker Hill dump last summer with results reported satisfactory.

The Sunflower mine in the Rough and Ready district west of Grass Valley, California, is being reopened under the direction of John Blair. The mine has been idle for several months due to Blair's illness. Considerable development work is planned following unwatering of the 100-foot shaft. The mine is owned by Mrs. Yarda Look, 2817 K Street, Sacramento, California.

The Sindelar Mines of Los Angeles, California, has taken a long-term lease on the upper workings of the Yellow Treasure mine at Lonely Camp, Kern County, California. Three to five men are engaged in timbering the shaft preliminary to sinking and crosscutting on four known ore bodies. A four-stage compressor, hoist, and other modern equipment have been installed at the property. The Yellow Treasure is owned by Tony DeMayo, Lonely Camp, and associates.

A five-stamp mill has been placed in operation at the Green Mountain mine near Grass Valley, California, operated by Kistle Brothers, Nevada City, California, and Charles Hoskins. A 1,000-foot pipe line was also completed recently. A seven-foot vein of ore was encountered in the winze, according to James Kistle. Assay tests from dump ore averaged \$9.40. Underground work is on a one-shift basis while the mill is operated three shifts. The milling plant will be enlarged to 10 stamps as soon as sufficient ore has been developed.

Shaw and Robin, mining contractors, Plymouth, California, are operating a 25-ton gravity concentration plant at the Casino mine as a custom plant.

The 250-ton flotation plant at the Mountain King mine of the Jumbo Consolidated Mining Company, Copperopolis, California, is operating at capacity on gold ore, and installation of a cyanide plant to treat flotation concentrates is planned. It is also planned to sink the shaft to the 1,400-foot level. A crew of 53 men is employed under the direction of Byron E. Rowe, general superintendent, Copperopolis. Operating officials include V. Chancellor, mine superintendent; Alvin Doe, mill superintendent; Conrad Martin, chief mine engineer; Otto B. Parker, master mechanic; Harold Scheave, chief chemist; Walter Smith, chief clerk. W. B. Phelps, 1494 Brae Burn Road, Altadena, California, is consulting engineer.

Steady operations continue at the property of the Carson Hill Gold Mining Cor-



WHY PUT UP WITH A "HAND ME DOWN" GET A "TAILOR-MADE" POMONA THAT LIFTS MORE WATER LONGER FOR LESS

Dependability on a mining job, whether for de-watering, mine shaft sinking or mine station work, is a prime pumping requisite. And dependability in a pump means service, adequate supply or capacity, freedom from costly shut-down and repair. Pomona not only takes all this into consideration at the time of installation but—Pomona goes farther. It "Tailor-makes" each individual pump for the job in hand, carefully weighing every factor of operation and requirement. All of this means added profits because YOUR Pomona will be made for YOUR JOB, including such exclusive features as water-lubricated, revolvable rubber bearings, above-ground impeller adjustment and accessible packing gland, grit-resistant bowl assembly, non-reverse ratchets, eliminating "backing off". When pump head is exposed, Pomona Mine Pumps are equipped with drip shields—stators and rotors have moisture-resistant windings. Like the tailor who uses the finest of wools, Pomona quality starts with the raw product, progresses through one of the oldest and largest pump engineering and manufacturing plants in the world to its great distributing organization of dealer-engineers. That's why we say, "Get a 'Tailor-made' Pomona, that lifts more water longer for less!"

POMONA

Water-Lubricated

PUMPS

POMONA

ST. LOUIS, MO.



PUMP CO.

POMONA, CALIF.

For Use In FLOTATION



NICHOLS Triangle Brand COPPER SULPHATE

99%
PURE

We offer a specially
screened product for
this purpose.

Shipment from our El Paso Refinery

PHELPS DODGE REFINING CORPORATION

40 Wall Street, New York
230 N. Michigan Ave., Chicago

SOUTHWESTERN DISTRIBUTOR

ASARCO MERCANTILE CO.

Mills Bldg.,
EL PASO, TEXAS

poration, John A. Burgess, general manager, Melones, California, with a daily production of 1,100 tons of gold ore. The milling plant is equipped for amalgamation, leaching, and cyaniding. The operating crew totals 164 men, and the personnel includes Frank Wagner, mine superintendent; E. C. Maroon, mill superintendent; Harry Libby, cyanide plant superintendent; Max Peterson, chief mine engineer; A. A. Weisbecker, master mechanic; Vic Swanson, chief electrician; L. MonteVerda, purchasing agent; Max Peterson, safety inspector.

Changes have been made in the milling machinery at the Aetna quicksilver mine, Aetna Springs, California, preparatory to active operations early in September. The mine is operated under lease by the Knapp Corporation, J. F. Knapp, general manager, 1401 Park Avenue, Oakland, California. C. W. Erickson, Aetna Springs, is general superintendent at the mine.

Installation of a new hoist, erection of a shop and change house, sinking of the shaft to the 200-foot level, and approximately 700 feet of crosscutting and drifting are planned for the Antietam mine, Kernville, California. At present the property is being cleaned up and foundations are being prepared for machinery. The mine is under lease to G. H. McFarland, 10525 Commerce Avenue, Tujunga, California. B. D. Sawyer, Kernville, owner of the property, is mine superintendent.

The dredge of the Cal Oro Dredging Company is handling from 3,000 to 4,000 cubic yards of material daily in its operation near Yreka, California. A crew of nine men is employed on the boat, under the direction of A. O. Roderick, general superintendent, Box 365, Yreka. Dan Isaac, Yreka, is chief electrician. The company is headed by Lawrence Gardella, president and general manager, 681 Market Street, San Francisco, California.

The Butte Creek Dredging Company, Lawrence Gardella, president, 681 Market Street, San Francisco, California, will install a seven-cubic foot dredge on Butte Creek near Chico, California. The boat will have a steel sectional hull with wooden superstructure.

The California Engels Mining Company, A. J. Heller, president and general manager, 350 California Street, San Francisco, California, is operating two properties, one at Caliente, California, and the Groom mine at Wickenburg, Arizona. A total of 18 men is employed at the two properties, with work at Caliente directed by R. E. Frasch. The milling capacity at the Caliente property is being increased to 50 tons daily, and while the Groom mine is still under development, it is expected to be on a production basis within six months.

The Empire Star Mines Company, Grass Valley, California, has started actual work on the 6,000-foot crosscut which is to be run from the 400-foot level of the Murchie mine to the North Banner area. It is estimated that the project will cost approximately \$100,000. Modern equipment has been provided to expedite the work of driving the crosscut.

A crew of 12 men is developing ground from two tunnels at the Quail mine, Coul-

terville, California, under the direction of Wilson C. Miller, superintendent. The upper tunnel has been driven a distance of 700 feet with 350 feet of backs. The lower tunnel is in 1,500 feet with 700 feet of backs. The mine is equipped with an 80-ton, Diesel-powered mill, which has been overhauled and improved. Water is secured from an underground reservoir recently installed in the mine. A dewatering cone has also been installed, which, with the head of about 20,000 gallons which is available, has given ample water. The mill has been on a two-shift basis since August 15. The mine is operated by Quail Gold Mines, Inc., Jerome I. Drumheller, president, 502 Columbia Building, Spokane, Washington.

Approximately 100 tons of ore daily are being treated in the milling plant at the Malvina mine of the Boston California Mining Company, Coulterville, California, under the direction of Ed McMahon, superintendent, Box 709, Sonora, California. A crew of 35 men is employed. Drifting and stoping are in progress on a vein ranging in width from 3 to 12 feet, which carries commercial ore. Charles Segerstrom, Sonora, is president of the company.

The Bondurant mine located 14 miles east of Coulterville, California, is being operated by a San Francisco group under the management of J. B. Zimmerman. From 25 to 30 tons of ore are mined and milled daily, and 30 men are working three shifts. It is understood that the group is making plans to take over the adjoining Louisiana mine. John Eggers is superintendent at the property and Frank Kuhre is foreman. S. E. Wynne is mill foreman.

The Julian Wolters quartz mine is under lease and bond to an Oregon company, according to J. A. Vigeant, owner, La Porte, California. Considerable development work has been done and a mill is now being installed at the property.

Equipment is being installed at the Lindy mine near Clear Creek, California, preparatory to active operation. The mine is being developed by Emery Barney and Ralph Watson. W. C. Ford, Happy Camp, California, is production manager.

William Harwood is reported to have acquired the Middle Butte mine at Mojave, California. The property was formerly operated by George Holmes, discoverer of the Golden Queen mine at Mojave.

A larger ball mill will be installed soon at the property of the Ramsey Mining Company, Milton G. Ramsey, president, Lucerne Valley, California, to handle the increased output of ore. He reports that he shipped an average of \$3,600 monthly to the mint at San Francisco during May, June, and July.

A small rod mill has been added to the equipment at the Spring Hill mine, Grass Valley, California, supplementing the ball mill and flotation machinery. The plant is treating custom ore from the Union, California, Mack, and Giant King mines. C. C. Cushwa is manager at the mine. Stewart M. Marshall, 1915 Mills Tower, San Francisco, is general manager.

Dickson A. Boyd, 642 North Plymouth Boulevard, Los Angeles, California, one of the lessees of the Beauregard Extension

group, Kernville, California, has acquired the interests of his associates and is now in sole control of the property. Upon completion of reorganization plans, a crew will be put on to develop the ore shoots which have been worked in the upper levels. The property is owned by B. D. Sawyer of Kernville.

R. D. Gardner, 2710 Marshall Way, Sacramento, California, has made application for a permit to divert 250 cubic feet of water per second from the North Fork of the American River for mining purposes. Estimated cost of the project is \$300,000.

E. A. Humphreys, Sierra City, California, has been authorized to divert 38 cubic feet of water per second from the South Fork of the North Fork of the Yuba River for mining purposes. The diversion will cost approximately \$5,000.

E. A. Kent, Inc., has placed in operation a new dredge and dragline on Sutter Creek about two miles above Sutter Creek, California. The dredge has a daily capacity of between 3,500 and 4,000 cubic yards and ground which returns 10 cents a yard is being worked satisfactorily. It is estimated that 18 months to two years will be required to work the area. J. M. Lowden is superintendent of the boat. Joe Rice, Sonora, California, is general superintendent of the company.

W. J. Rogers is reported to have acquired the interest of his partner, W. T. Gentry, in the Rogers-Gentry mine at Neenach, California. A 25-ton mill has been in-



stalled at the property and is treating material from the old glory hole and the dump.

A 50-ton mill has been ordered for installation at the property of the Gold Butte Mines, Inc., John W. Ross, president and general manager, Berry Creek, California. Two new shafts are being sunk at the property also, one with a view to encountering the old vein which was located about five years ago. The other is being sunk on the Gold Hill vein.

The Comstock Gold Point Mines Company, C. R. Miner, president, 418 Richfield Oil Building, Oakland, California, is re-opening and will develop the Tanner mine near Murphys, California. The property is on the same strike as the Sheepranch property, located about four miles distant. Work at present is in progress on the 600-foot level. The Comstock company also owns four claims in the Currant Creek district of Nye County, Nevada. Other officers are Dr. N. N. Ashley, vice-president; James E. Sharp, secretary; and E. E. Cowell, assistant secretary.

Preparations are being made by Yuba Consolidated Gold Fields, Ltd., F. C. Van Deirse, vice-president in charge of oper-

ations, 351 California Street, San Francisco, California, for dredging of the 640-acre Hearst ranch located south of Oroville, California. A dredge pit is being excavated and work will begin immediately on construction of a dredge. The new boat will be of approximately the same size as the company's No. 2 dredge, now working in the Biggs district. It will have a capacity of 8 1/2 cubic feet and several months will be required for its completion. Between 50 and 60 men will be employed on construction and when operating at capacity a crew of 14 or 15 men will be required to handle the boat. H. C. Perring, 1224 Forty-first Street, Sacramento, California, is general superintendent of Yuba Consolidated.

The Associated Mining Company, L. E. Thompson, superintendent, Plymouth, California, is preparing to sink the 500-foot shaft at the Pioneer gold mine, Plymouth, an additional 1,000 feet. A crew of 16 men is employed. The property is equipped with a 50-ton amalgamation mill. Ralph Walter, Jackson, California, is chief mine engineer.

The Baltic Mines Corporation has been organized with an authorized capitalization of \$200,000, to develop the Columbus and the Mount Hope properties near Grizzly Flats, California. The Columbus carries two gold-bearing sulphide veins and the Mount Hope carries a similar vein almost parallel to the first two. The Columbus veins will be developed by means of a joint adit, from which crosscuts will be driven. At the adit portal the main vein is 12 feet wide and sampled \$57 a ton in gold alone.

Just Off The Press!

This new bulletin contains 28 large pages packed with real information regarding the design, construction and operation of Eimco Drum- and Disc-Type Filters for the mining industry.

Large clear type, large clear illustrations, and simple concise wording, make every page easy to read and understand. If your responsibilities include, or may include, the operation of continuous-vacuum filters you need this bulletin and we'll be glad to mail it without charge or obligation of any kind. The coupon below is for mutual convenience, but a letter or post card will bring an equally prompt reply.

The Eimco Corporation, Salt Lake City, Utah, U. S. A.
Gentlemen:

I am interested in continuous-vacuum filters, and would like to receive a copy of your new Bulletin No. 402, with the understanding that no charge or obligation of any kind will be incurred.

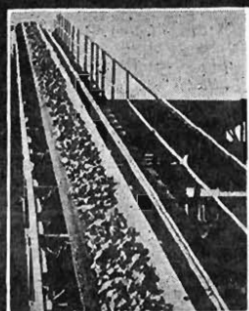
Name.....

Position or Title.....

Name of Company.....

Address.....

What does Material Handling Cost?



The cost of belt conveying is largely dependent on the life of the belt. It is the number of tons carried that counts!

BWH conveyor belts help in keeping operating costs low because:

1. All BWH belts are vulcanized continuously, which means uniformity.
2. The covers which absorb the abuse are scientifically compounded to resist aging.
3. Both carcass and covers are built of stout, rugged materials.

When next in the market for a conveyor belt, let us quote you. BWH belts are famous for

Stepping up the tonnage
Stepping down the wear

Their cost is competitive. Get this added value on your next belt!

**PRATT-GILBERT
HARDWARE CO.**
PHOENIX ARIZONA

FLEXIPIPE

The improved flexible tubing for
mine and tunnel ventilation

FLEXIPIPE adds to your profits by increasing the efficiency of your men. Smoke and gases are blown away quickly after shooting, and your men can return to their work within a few minutes time.

Send for free sample and full information.

BEMIS BRO. BAG CO., ST. LOUIS, MO.

The existing 1,700-foot Mount Hope adit will be cleared for use and a winze sunk from it into the ore shoot at a point 800 feet in from its portal. The shoot is said to have assayed \$71 per ton across its two-foot width at that point. Sulphide milling ore will be produced from the beginning at both properties. Pending later construction of a flotation plant below the portal of the main Columbus adit, when reserves warrant, the ore produced from both adits will be stored in bins and periodically custom-milled. Arrangements have been made whereby the ore will be treated in the 70-ton flotation plant of Cosumnes Mines, Inc., about a mile distant. Active operations began August 30 and are now well under way. Florian Sciaroni, Grizzly Flats, is president and general manager of operations. J. D. Bomgardner, San Francisco realty man, is vice-president and treasurer, and Mrs. Dode Lillian Davidson is secretary. Addison N. Clark, 359 Bellevue Avenue, Oakland, California, is consulting engineer for the company and he has recently completed a report on the two properties. Power will be secured from the line serving the Cosumnes Mines, which crosses the Baltic company's property. Sciaroni was formerly superintendent of Cosumnes Mines and that company's mill and power line were constructed under his direction.

It is reported that a 50-ton mill will be erected at the **Seven Aces** mine near Alleghany, California, in the near future. The ore is said to average \$27 per ton across the face of the drift, excluding the high-grade portion. J. H. Lashbaugh is superintendent at the mine. W. B. Brinker of New York is financially interested in the property.

Thomas N. Coan is reconditioning the 500-foot shaft at his **Coan** mine located west of Nevada City, California, and he will install a hoist and a mill on the property. The mine was damaged by fire several years ago. The vein is reported to be a continuation of the old **Champion** vein.

Richard Richards, mining engineer, Nevada City, California, is employing six men on the **McGinniss** gravel property near Quaker Hill. Test holes have been sunk on the 80-acre tract, and work is at present under way on construction of a reservoir to store water for sluicing operations. A road is being built to the property. It is planned to handle the gravel by means of a dredge and work is expected to start in the fall.

The mill at the property of the **Kelsey Mining Company, Inc.**, Placerville, California, is operating three shifts daily and is treating approximately 80 tons of ore. The material is being mined from an open pit by means of a gasoline shovel. George Van Vleck is working the pit under lease from the company, and he is employing three men. The company employs five men in milling operations. E. J. Willard is in charge at the property for the Kelsey company. E. T. Willard, 519 California Street, San Francisco, is secretary and general manager.

C. D. Helm, Jack Helm, Verne Wiley, and E. R. Edwards are carrying on exploration and development work from a

50-foot prospect shaft at the **Fred Veerkamp** mine near Garden Valley, California. At present they are drifting on a vein which lies between the slate footwall and the porphyry hanging wall.

Shaft sinking has been completed at the **Hatton** lease south of Randsburg, California, and the crew is now drifting south on the vein. Ore shipments have been averaging \$35 per ton in gold. The Hatton lease has been operating approximately seven months, and is being developed by Glen and J. W. Hatton, and H. W. Peterson.

The old **Dennebrog** mine in the Browns Valley district is being reopened by the **Empire Star Mines Company**, Grass Valley, California. The old property has been idle for 42 years, but workmen are reported to have found the shaft and timbers in good condition. Reopening of the mine is being directed by E. R. Bennett, superintendent of the Pennsylvania mine, Nevada City, California. The Pennsylvania, another property operated by Empire Star, is also located in Browns Valley district.

The **Ben Butler Mining Corporation**, P. F. Balfour, 718 West Waldo Avenue, Independence, Missouri, president, is starting production from its property at **Minturn**, Colorado. Over 40 men are employed in the mine and mill. A washing

and sorting plant has been installed that is capable of handling 150 tons of ore in an eight-hour shift. E. A. Brinton of Minturn, Colorado, is secretary, general manager, and purchasing agent. Sam Dinsmoor, Redcliff, is mine superintendent and Omar Fleming of Minturn is chief mechanical engineer and electrician. A total of 3,500 feet of work has been done in the Ben Butler mine, held under bond and lease from John S. Redford of Denver. Development reaches a depth of 250 feet. Values are in gold, silver, and copper. About 200 tons of ore are being handled daily.

The **Silver Cycle Leasing Company**, which has a lease on the Clara B, Austin, and Mudslide properties near Georgetown, Colorado, has started operations. The shaft is being sunk to a depth of 100 feet and is stated to be in high-grade silver-lead ore. Work is being carried on through the Commonwealth tunnel. Four men are employed at present, but the force will be increased as work progresses. G. W. Winslow, Box 497, Georgetown, is president and M. T. Quinn of the same address is secretary-treasurer and general manager. Ernest Sperger of Georgetown is general superintendent.

The **Lehman Fluorspar Company**, E. W. Lehman of Jamestown, Colorado, president and general manager, is producing about eight tons of fluorspar daily. A crew of seven men is employed in mine and mill. Capacity is 30 tons daily. P. E. Walker, Jamestown, is general superintendent and F. M. Walker is chief clerk. The property is developed by about 800 feet of workings.

C. H. Conner of Silver Cliff, Colorado, with his two sons and his father, owns and



MERRILL · CROWE

Simultaneous Clarification

PRECIPITATION PROCESS

The high efficiency of the Merrill-Crowe Precipitation Process has made it the recognized standard throughout the world. SIMULTANEOUSLY effecting the steps of Clarification, Deaeration and Precipitation plus a New development—"PRECOATING" of the clarifying leaves, results in substantially perfect clarification. Lowered zinc consumption and more efficient precipitation, i.e., lower "barrens" results from perfect clarification. Bulletin sent on request.

The MERRILL COMPANY Engineers
343 Sansome Street, San Francisco, California



EXTRALATERAL RIGHTS SUIT WON BY EMPIRE STAR MINES

THE third district court of appeals has affirmed the decision of Judge Warren Steel of Yuba County, California, in the case of Worthington Ames vs. Empire Star Mines Company, Ltd., Grass Valley, California, holding that the mining claimant has an extralateral right under a railroad patent.

Ames was the owner of railroad land in Browns Valley, California, adjacent to the Pennsylvania and Jefferson mines, now being worked by the Empire Star Mines Company. Ames contended that his railroad patent, which was issued in 1880, confirmed his title as of the date of the definite location of the railroad in 1868, giving him title of everything from the surface to the center of the earth including the segment of the Jefferson-Pennsylvania vein within his property. The Empire Star Mines Company, Ltd., contended that because of its location of the mining claim prior to either the Railroad Act of 1886 or the definite location of the railroad in 1868, that the entire extralateral right of the vein was severed from the public domain and became part of the mining claim.

The case also involved several other points with respect to the validity of mining locations on school lands, and the effect of the severance of mineral rights from the overlying land, a practice long followed in Nevada County.

The case has held the interest of mining men and mining attorneys throughout the west and is hailed as a victory for the mining interests.

The Examination of Placer Deposits

By THOMAS A. GRAVES

For . . .

- ENGINEERS
- STUDENTS
- OWNERS

Here is a wealth of information on the occurrence, examination, and exploitation of placer deposits in a handy little book that can be conveniently tucked away and carried in the field. It covers such subjects as: classification and formation of alluvial deposits, concentrates and their significance, gold, age of placers, distribution of placers, placer exploitation—equipment and methods, placer examinations, economic considerations, and sampling methods and equipment. Valuable tables are also included.

168 pages, illustrated, \$3.00

PHOENIX

THE MINING JOURNAL

ARIZONA

First National Bank of Arizona

TWO OFFICES IN PHOENIX

Washington and First Ave. ● Washington and Central Ave.

Branches at Tempe and Yuma

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

GOOD CONCENTRATING TABLES

ARE
WINNING MORE FAVOR
AND
WIDER APPLICATION
DAILY.

"THE ORIGINAL"

DEISTER CONCENTRATOR COMPANY

925 Glasgow Avenue

Incorporated 1896

Ft. Wayne, Indiana

APACHE POWDER COMPANY

Manufacturers of High Explosives for Domestic and Export Trade, All grades of Gelatin and Ammonia Dynamites. Quarry and Grading Powders. Distributors of Blasting Caps, Electric Detonators, Fuse and Blasting Accessories.

Plant and General Office
BENSON, ARIZONA

411 West Fifth Street
LOS ANGELES, CALIFORNIA

RESOLUTIONS DRAFTED BY PROMINENT MINING MEN

AN AGGRESSIVE stand on the legislative problems confronting the mining industry was taken by the resolutions committee which drafted the "Declaration of Policy" appearing elsewhere in this issue. The platform set forth by the committee was unanimously adopted by the A. M. C. members.

D. D. Moffat, western division chairman of the American Mining Congress, and general manager of the Utah Copper Company, appointed the following men on the committee: Alaska, Herbert L. Faulkner, counsel, Alaska Miners Association; Arizona, P. G. Beckett, vice-president, Phelps Dodge Corporation; California, Worthen Bradley, president, Bradley Mining Company; Colorado, B. T. Poxon, president and general manager, Emperius Mining Company; Idaho, Donald A. Callahan, Idaho state comptroller; Michigan-Minnesota, R. C. Allen, president, Lake Superior Iron Ore Association; Montana, Dan M. Kelly, vice-president in charge of western operations, Anaconda Copper Mining Company; Nevada, Henry M. Rives, secretary, Nevada Mine Operators Association; New Mexico, Ira L. Wright, manager, Black Hawk Consolidated Mining Company; Oklahoma, Evan Just, secretary, Tri-State Zinc and Lead Ore Producers Association; Oregon, Leverett Davis, general manager, Cornucopia Gold Mines, Inc.; South Dakota, Guy N. Bjorge, general manager, Homestake Min-

BIDS OPENED ON THIRD CALIFORNIA DEBRIS DAM

THE George Pollock Company, Forum Building, Sacramento, California, submitted the low bid of \$643,450.75 for construction of the Ruck-a-Chucky debris dam on the Middle Fork of the American River about 18 miles above Auburn, California. The bids will be referred to Washington before award of contract. The proposed dam is 158 feet high and 705 feet long at the crest.

Pouring of concrete on the Narrows dam, another of the debris projects, will begin October 10, according to L. E. Dixon, contractor for the structure, who reports that excavation on the dam is virtually completed. A large gravel and sand grading and washing plant has been constructed 4½ miles from the Narrows dam site where material for the cement will be obtained. The cement mixing plant has been constructed at the dam and the material, ready for pouring, will be moved by means of cables between two towers and dumped into the forms.

The board of engineers and the California Debris Commission, Post Office Building, Sacramento, California, have been authorized to make a new investigation and surveys for relocation of the proposed hydraulic mining debris dam on Bear River near Colfax, California, in an endeavor to eliminate existing difficulties.

NEW CONCERN DEVELOPING TWO GROUPS IN NYE COUNTY

THE Currant Mountain Mines Company was incorporated July 29, 1939, in Nevada and has established head offices in the First National Bank Building, Reno. The mine office is in the City Hall Building, Ely. The company owns 10 lode claims, paid for in full, in the White Pine Range, Nye County, Nevada, about 20 miles south of the Hamilton camp. Some development work was done in this property during the Hamilton silver boom. At present surveying and clean-up work is being done so that the ground may be thoroughly sampled. Values are in silver, gold, and copper.

This company also owns three lode claims adjoining the property of Steve J. Pappas, who in April of this year made a sensational gold discovery in the Currant Creek district. This ground is also in Nye County, but tributary to Ely, 42 miles by highway. While the Currant Mountain Mines Company is prospecting these gold claims, no commercial ore has been found to date, according to F. L. Rigsby, Box 91, Ely, one of the owners of the concern. However, pannings have been showing a few colors and some gold float has also been found on the ground.

The concern is owned by Morley Griswold and H. L. Bowers, both of Reno; F. L. Rigsby, Rodney Molyneux, Charles H. Gallagher, Ted Oxborrow, Mike Leconte, and R. R. Gill, all of Ely; Frank Vanover of Duckwater; and C. A. McDowell of Currant, Nevada.

CONSOLIDATED COPPERMINES GIVES SIX-MONTH FIGURES

THE Consolidated Coppermines Corporation, which operates at Kimberly, Nevada, reports a net income, before certain specified charges, for the six months ended June 30, 1939, amounting to \$690,555. From this was deductible \$137,438 for exploration and development charges; \$140,843 for amortization of mine development; and \$69,473 for depreciation, leaving a net income of \$342,801 before depletion and federal income tax. The latter is estimated at \$15,000 for the six month period.

Copper production for the first six months on the basis of smelter settlements was 22,262,472 pounds. The drilling program is being continued upon a moderate basis. The first few holes gave indications comparable to the favorable results of last year, but the more recent drilling, while showing mineralization, has not disclosed substantial additional ore of a grade classifiable as commercial under present conditions.

The U. S. Treasury department, in reviewing the company's income tax return for 1937, has proposed an additional assessment of \$357,420 and interest. A protest has been filed by the company. The board of governors of the New York Stock Exchange has approved listing of this stock, subject to action by the SEC.

SECOND VOTE AT HOWE SOUND RETURNS EMPLOYES TO WORK

THE ORIGINAL offer of the Howe Sound Company, with the provision that the property would be operated 13 out of 14 days and an additional 25-cent increase for low-bracket men in the mess hotel, was again voted upon at the request of the union members. The employees voted to cease striking and return to work. The strike was called July 6, 1939, and the property of the Chelan Division at Holden, Washington, was idle for about six weeks. About 350 men were affected when the mine and 2,000-ton mill were closed. John J. Curzon of Holden is general superintendent.

The vote to accept the company's proposal and return to work is reported to have been 238 in favor and 46 against it. The new wage scale is stated to raise the base wage 50 cents a day and to provide for a sliding scale upward when the price of copper rises above 10 cents.

BUREAU OF MINES EXAMINING TIN DEPOSITS IN NEW MEXICO

THE United States Bureau of Mines is making an examination of tin deposits in Catron County, New Mexico, near Beaverhead. The work is being done as a part of the program to locate strategic minerals necessary in time of war and for which an appropriation has been made.

In late August a crew of 14 men under M. E. Volin was engaged in sampling deposits on Hardcastle Creek. Other deposits including those on Taylor Creek are to be examined as the work progresses. The claim owners have signed an agreement giving the government permission to prospect the deposits for a period of one year with an option covering an additional 12 months.

The Southwest Experiment Station of the Bureau of Mines at Tucson, Arizona, of which E. D. Gardner is supervising engineer, is headquarters for the strategic mineral work.

FRIENDLY SUIT FILED IN NEW MEXICO TAX CASE

THE Maxwell Land Grant Company has filed suit in district court at Raton, New Mexico, seeking a declaratory judgment under the sales tax law as to whether the company is liable to taxation on sale of gold ore to a smelter out of the state or to the government mint at Denver.

The suit, a friendly one, is in the nature of a test case and the decision is of extreme interest to the mining industry, as the majority of the mines have never paid tax on these sales. Under an arrangement with the school tax division, the company's books were audited recently and the suit brought for the declaratory judgment as to its taxability.

Taxability of these sales has been a debated question throughout the life of the school tax law, according to G. S. Carter, director of the sales tax division of the bureau of revenue, and the friendly legal action was instituted to settle the issue. A decision favorable to the bureau would bring approximately \$50,000 in immediate revenue and an annual income of approximately \$15,000 to the school tax division, Carter stated.

NEW COMPENSATION LAW NOW IN EFFECT IN CALIFORNIA

COMPENSATION insurance is now mandatory upon all mine operators in California, irrespective of size of operations. The new ruling, adopted at the last session of the state legislature, became effective September 13. Self-insurers alone are excepted. Severe penalties attach to willful disregard of the law's provisions.

AMERICAN CERTIFIED PIPE

WATER — VENTILATING — DREDGE — HYDRAULIC

Precision made of the best materials. Water pipe supplied with a special asphaltum dip or dipped and wrapped. Bell end, drive joint or butt weld joint. Special pipe fabricated to any desired specifications.

AMERICAN PIPE & STEEL CORPORATION

SHEET & PLATE FABRICATION

ALHAMBRA ● CALIFORNIA

J. W. HOEFLING* relates

A Compensation Insurance Cost Experience

IN JANUARY 1933 our firm entered the mining field through purchase and operation of the Surcease Mine, Butte County, California. During previous endeavors compensation insurance had never been a serious factor in costs of operation. However, it was soon apparent that it was a different story in mining with a combination of high payroll and high rates.

A study of the situation resulted in nothing but a confusion of claims to "lowest ultimate cost" through stressing of various technical factors, safety engineering services, etc., by every insurance carrier approached. It was, therefore, decided to apply the acid test of experience over a period of years by changing from one carrier to another among those specializing in mine coverage and then to compare the "mill-test" results.

This experience covered a period of four years (three years, nine months to be exact) and involved three different carriers, two so-called mutuals against the yardstick of the State Compensation Insurance Fund. The comparative results for this period have been so conclusive as to leave no further doubt and that experience should be of interest to other operators and employers. In this article we shall designate the two different carriers as A and B.

Our first policy, under the comparison schedule covering April 7, 1934, to April 7, 1935, was placed with carrier A. Unfortunately, during that period a serious accident occurred involving two men. Against the comparatively small premium involved at the time this resulted in losses in excess of premiums paid. Naturally, this abnormal situation could not be fitted into any comparative data based on normalcy, but it is mentioned here as reference will be made to it later. Our policy was simply renewed with A for another year. We will call this "re-sampling" policy A-2 to distinguish it from the "spoiled sample" A-1 referred to above.

Under policy A-2 \$4,166.45 was paid in premiums. Regular losses of \$1,200.20 were incurred, furnishing a loss ratio of 29 per cent. According to advance representations this indicated an earned dividend of 18.5 per cent, or about \$770. Shortly before the date when the dividend would be payable a silicosis claim was filed by a former employe covered under both policies A-1 and A-2. This injected an open case which carried along until the claim was finally settled in May, 1938. A pro-rata assessment of \$349.42 under this claim was paid by carrier A as its liability under both policies A-1 and A-2. After pressing demands continually for a final accounting on this policy for the next two months we finally were informed, on Au-

*Hoefling Brothers, Operators of the Surcease Mine, Oroville, California.

For the benefit of other employers in the mining industry the author presents these facts which he has compiled from his own experience with compensation insurance in California. The problem of compensation insurance is a complicated and confusing one, so it behooves all mine operators to take full cognizance of the developments in that field.

gust 10, that it had wound up with a loss ratio of 74 per cent, hence no dividend.

We immediately demanded an explanation of the meteoric rise in our loss ratio. When no answer had been returned by September 2 the matter of securing an accounting was taken up with the State Insurance Commissioner. On September 10 we had a letter from A explaining that a silicosis reserve of \$1,482.08 plus a claims expense account of \$400 had been charged to our policy. Following up further this exorbitant charge-up we finally gathered this: All assessments, plus \$400 extra for costs, arising from the silicosis claim were charged against policy A-2 regardless of the fact that approximately half of the liability accrued against A-1; and a "special reserve" for \$1,000 was set up against a claim not yet of record but which they "expected" to be filed some time in the future. Furthermore, a letter regarding the matter, written by the executive head of A to the Division of Insurance, concluded with this significant statement: "We wish to call to the attention of the Division of Insurance that it has no jurisdiction in reducing any of the claims reserves and also has no jurisdiction over the payment of dividends on any individual case, and that the policy is a contract between the assured and the company. Therefore, we are closing our file regarding this matter."

End Chapter One. (April 7, 1935—October 28, 1938)

CHAPTER TWO: This covers the experience under our policy period April 7, 1936—April 7, 1937, through carrier B. Premium of \$8,494.35 paid in. As of November 12, 1937, all cases were reported

closed except one small carry-over claim for which a nominal reserve of \$50 was set up. The total of all losses accrued amounted to \$2,414.87, including the small reserve just mentioned. This provided a loss ratio of 28.4 per cent, indicating about a 32 per cent or \$2,700 dividend. However, we were informed that while all claims incurred under this policy apparently were closed the original reserve (about \$700 over cost then showing) on the most serious injury case was still to be carried as the case "might be re-opened." The dividend scales of this company are based on loss ratios in 10 per cent steps. This reserve charge would drop us into the next loss ratio bracket of 30-40 per cent with a 36 1/2 per cent loss ratio, with dividend dropping to 27 per cent, or \$2,293.47. Admitting some grounds for this reserve, we made no serious objections to this procedure. But we were further informed that an additional special reserve for \$300 for "unknowns" was deemed advisable to protect the carrier against unforeseen contingencies arising out of our policy. This little reserve had the significant effect of bringing about a 40 1/2 per cent loss ratio, dropping it into the 40-50 bracket, and reducing the dividend to 21 per cent, or \$1,826.26. Thus a \$300 mark-up of loss ratio through an arbitrary addition to reserves resulted in a decrease of dividends payable by \$467.21. The writer was in personal conference with the general manager at the time. When the above effect of the "reserve for unknown" on our dividend was pointed out, it was held to be "merely a coincidence." Insistence by the writer on some slight adjustment of the arbitrary reserve figures, permitting us to remain in the lower loss-ratio bracket which would carry the higher dividend actually earned (a reduction of only \$50 would have done so), was met with an attitude of long-suffering patience and a final polite showing out of the door. Realizing that half a loaf was after all much better than no bread, no further attempt was made to press the issue. In a few weeks our dividend check was received to the amount of \$1,734.98. It was explained that 5 per cent of the earned dividend, or \$91.31, had been deducted as was "customary" for the underwriters. Such custom had been very effectively kept a secret from the writer until dividend-paying time came around.

End Chapter Two. (April 7, 1936—January 21, 1938)

	Premium In \$	Losses In \$	Loss Ratio %	Dividend In \$	Net Cost In \$	Net Cost % of Prem. Paid in
Policy A-2 1935-36.....	4,166.45	1,382.60*	33	0	2,783.85	67
Policy B 1936-37.....	8,494.35	2,414.87	28	1,734.98	4,149.85	49
State Fund 9 mos.-37.....	7,310.97	1,795.00	24	4,496.25	1,019.72	14

*\$182.40 of disputed silicosis assessment of \$349.42 pro-rated to this policy, on basis of time, over regular incurred losses.

CHAPTER THREE: It was decided at this time to get our compensation coverage on a calendar-year basis. Hence our policy under the next carrier, the State Fund, was for the nine-month period April 7, 1937, to December 31, 1937. The premium developed was \$6,609.97 plus \$701 for silicosis surcharge, a total of \$7,310.97. Our own compilation of losses, closely followed out from periodic reports from the carrier, totaled \$1,795 with all cases closed, resulting in a loss ratio of 24½ per cent. With a dividend of 58 per cent estimated for that loss ratio in the \$7,000-8,000 premium bracket we anticipated (with tongue in cheek) a dividend of about \$4,240. On November 21, 1938, we received our dividend check. It was for \$4,496.25, or 61½ per cent against the fund's loss ratio record of 24 per cent.

End Chapter Three. (April 7, 1937—November 21, 1938)

NOW TO GO back and make some comparisons of the different mill-test results, in terms of net cost of insurance, that is, premium paid over losses incurred and dividends returned. Only substantiated losses are considered here, without benefit of reserves "for unknown," "anticipated" claims, or otherwise, 75-90 per cent of premiums due to mining.

In terms of modifying conditions (i.e., size of premium and current manual rates) as they applied under the State Fund policy, percentage of net cost under A-2 would probably be favorably affected, i.e., slightly lowered, while it would be raised somewhat under B.

It is important to bear in mind also the long-range experience rating of a policy in connection with the above table and losses in general. Experience rating may earn the insured either a discount or a mark-up from current manual rates applying to a risk. Experience rating is, in effect, accrued loss ratio of the insured for the past. Hence, juggling of reserves to keep dividends down not only loads the loss ratio this year but also the experience rating of the future. As an example, the unpadding, low loss ratio we experienced under our State Fund policy in 1937 was not only followed by a good dividend currently, but also by a 13 per cent drop in our experience rating to apply on our 1939 policy. Thus our base rate for underground mining currently is 87 per cent of the manual rate of \$8.24, or \$7.17. (Incidentally this 7.17 rate is subject to further credits of 5 per cent for safety organization and 5 per cent for first-aid training of all men, making our final rate \$6.46.)

Other factors besides dividends, of course, enter the compensation insurance picture. There must be considered the fair treatment of the employe's claims and rights; safety engineering; periodic safety inspection; informative current reports on policy losses; and general cooperation with the insured. Carrier B deserves special credit for its work in safety engineering. After all, compensation insurance is just another example of fighting an effect—industrial accidents. A safety program, persistent and thorough-going, is necessary to get down to the root or cause of that

effect by eliminating the cause of accidents. On the other hand, the State Fund has been criticized for its lack of personal service and attention to detail, and not enough emphasis on safety engineering in the past. Its attitude seems to have been that the limited results to be obtained, due to indifference of the average insured (and even allergy on the part of some) to "extras" in the way of service and safety educational efforts, did not justify the higher cost which would wind up in the policy holder's lap anyway, careful and careless alike. It is up to the insured to decide, on the basis of his own conditions and attitude toward the problem, as well as the net cost record (as reflected primarily by dividends returned), what price and in what form he pays for his safety efforts (or lack of them), and the possibility that he is paying for them twice: i.e., by assuming the cost of a good safety program, himself, and then getting a smaller dividend than he is entitled to on the basis of loss ratio.

The State Fund's dividend rate for corresponding loss ratio always has been consistently high. However, through various smoke screen and red herring effects, more commonly known in business parlance as good salesmanship, these higher dividends have been and still are effectively discounted by competing "mutual" carriers as being only a part of the true net-cost picture. Many an out-right misrepresentation, half-truth, charge of political corruption, and inflation of piddling actual fact to bogie-man proportions has entered into this propaganda. But the real joker, aside from or on top of this difference in dividend schedules, lies in the opportunity for, or the exercise of, arbitrary manipulation of reserves. Reserves for "unknowns." Reserves for claims not filed but "anticipated." This procedure is entirely legal and there is nothing the assured can do about it. The official of carrier A bluntly said so, even to the State Insurance Commissioner whose primary function is to protect the solvency and welfare of the carriers and not of the insured. The latter's policy is his only contract with the carrier. He should read his policy carefully, especially the fine print. His dividend, if any, will be exactly what the carrier decides he should have, regardless of pre-election promises or "indications." He is simply shooting crap against dice loaded for the house. So it behooves him to pick his house with care. As for non-participating stock companies, they at least do not promise dividends to sell their services.

In the case of the State Fund, where the accumulation of excessive reserves has been the subject of much criticism in the

past, the fact nevertheless remains that un-used reserves or premiums collected and interest income therefrom return as dividends to its policy holders. So, both on the face of the record and a lack of incentive to fudge, we may well conclude that here at least honest dice are used. As a matter of fact, it seems a subject for comment that this state function has, comparatively speaking, a rather remarkable record of efficiency and economy of administration. The fund has been charged with many of the faults of the compensation insurance set-up in this state, some charges being glaringly unfair in certain instances to the writer's own knowledge. But after all it did not make the law, nor can it change the law, itself. It merely functions under that law on a strictly competitive basis with private and mutual companies. A wider understanding of this simple fact would avoid much confusion and susceptibility to "good salesmanship" of competing carriers.

The writer has, over the period of the past five years, heard much complaint about compensation insurance in this state. Most of it has been honest protest against unduly high rates—payable in advance—for the privilege of providing employment. Much of it has been simply barking up the wrong tree. And a great deal of the ballyhoo has simply been very clever insurance propaganda by certain carriers, rendered plausible enough by the extremely complicated nature of the subject and the involved schedules of administration. The writer freely admits that he, also, was thoroughly confused at the situation, and even fooled for a time. Hence the determination to get some real facts. There is unquestionably much room for improvement of the whole situation, but we are concerned here merely with the cost experience from the choice of tools we now have on hand, recognizing varying conditions of use.

The facts as brought out above are a matter of record in our files. The writer is glad to bring them out for the benefit of any other employer, particularly in the mining industry which seems to be considered fair prey for various forms of exploitation. Furthermore the writer is more or less under obligations to carriers A, B, and the State Fund to publish these results. Each of them was informed, before its files were closed on the policies involved, that comparative experience data were being compiled from them. The implied rendering of final account is, therefore, herewith fulfilled.

PAHRANAGAT VALLEY, NEVADA, SHOWN IN NEW SURVEY MAP

THE geological survey of the department of the interior recently released a contour map of Pahrnagat Valley in Nevada. The map is on a two-inch scale with contour intervals of 10 feet on land and five feet on water surfaces. It includes the area from the town of Hiko in Lincoln County to Maynard Lake, showing the course of the streams, configuration of the valley floor and adjacent slopes, houses, towns, roads, and other cultural features, and a large-scale survey of a dam site in Black Canyon.



ALLOY METALS USED IN STEEL MAKING LARGELY FROM ABROAD

AMERICAN steel producers are wholly or in large part dependent upon foreign sources for seven of the 12 principal non-ferrous metals used in the manufacture of steel, according to the American Iron and Steel Institute.

Nearly all of the chromium, cobalt, manganese, nickel, and tin and a substantial part of the supply of tungsten and vanadium consumed in recent years by the steel industry of the United States has been imported from foreign countries. Domestic resources of aluminum, copper, molybdenum, lead, and zinc, however, have been sufficient to supply the needs of American industry.

Non-ferrous metals used by the steel industry are used for three principal purposes: to assist in the chemistry of steel-making, to impart special properties to alloy steels, and to serve as a corrosion-resistant coating.

Both aluminum and manganese are employed to improve the quality of both plain carbon and alloy steels. Metals used principally in the production of alloy steels are chromium, cobalt, copper, molybdenum, nickel, tungsten, and vanadium. Lead, tin, and zinc are used chiefly in steel manufacture for coating steel to improve corrosion resistance.

Relatively insignificant amounts of chromium, manganese, nickel, and tin, states the report, have been produced here in recent years. The United States consumes 40 per cent of the world's chromium, however, 20 per cent of total manganese, 50 per cent of the nickel, and 45 per cent of the tin.

Chromium is imported from Africa, Cuba, Greece, New Caledonia, and Oceania, while manganese comes from Russia, the Gold Coast, Brazil, and India. Principal sources of nickel are Canada, Norway, and New Caledonia. Supplies of tin are imported principally from British Malaya, the United Kingdom, and Netherlands India.

Chromium and nickel are used extensively in the production of stainless and other alloy steels, while small amounts of manganese are used in nearly all types of steel either to remove impurities or to impart special properties. Most of the tin consumed by the steel industry is used in the manufacture of tin plate from which sanitary containers and other products are made.

Although no cobalt is produced in the United States, about 10 per cent of the world output is consumed here, imports coming principally from Canada, Belgian Africa, and Australia. Cobalt is used by the steel industry in the production of steel for high-speed cutting tools and for permanent magnets.

In recent years the United States has produced about 10 per cent of the world output of tungsten, but about 20 per cent of world production has been consumed here. Principal foreign sources of tungsten are China and British Malaya. American vanadium production has represented

about 15 per cent of the world total. About 25 per cent of the total vanadium output has been consumed here, the imports coming mainly from Peru and Rhodesia.

Both tungsten and vanadium are used in the production of tool steels, and vanadium is also used in the manufacture of steel for springs and machinery parts.

Aluminum is used in small amounts by the steel industry to remove gases and impurities from steel, while small amounts of copper alloyed with steel improve corrosion resistance. Recently about 30 per cent of world production of aluminum was produced in the United States, and about 40 per cent of the world's copper output. The amount of aluminum and copper produced in this country far exceeds the amount required for steelmaking purposes.

The United States in recent years has produced about 80 per cent of the world's molybdenum, and has used about 30 per cent of world output. Molybdenum steels are useful for tools, machinery parts, and tubing for aircraft fuselages.

Most of the lead and zinc used in steel manufacture goes to coat sheet steel to retard corrosion. Coating sheet steel with a mixture of lead and tin produces terne plate, which is used for roofing sheets and for automobile gas tanks. Galvanized, or zinc-coated sheets, are used for roofing and siding of buildings, gutters and down spouts, containers, culverts, etc.

United States in recent years has produced 30 per cent of the world's lead and 35 per cent of all zinc, more than enough for the needs of the steel industry.

CALIFORNIA MINES DIVISION RELEASES JANUARY BULLETIN

THE California Division of Mines, under the direction of Walter W. Bradley, state mineralogist, announces the release of the January, 1939, issue of "California Journal of Mines and Geology." This number is accompanied by a map of San Diego County showing the location of mining claims.

It also contains a report on the mineral resources of San Diego County by W. B. Tucker, district mining engineer, Division of Mines, Los Angeles, and Charles H. Reed, mining engineer, Bureau of Mines of San Diego County.

The geologic branch presents a timely paper on the "Geology and Oil Possibilities of Southwestern San Diego County" by Leo George Hertlein, assistant curator, Department of Paleontology, California Academy of Sciences, and U. S. Grant IV, associate professor of geology, University of California at Los Angeles.

Two special articles, "The Prospect for Minor Metals and Nonmetallic Minerals" by John Wellington Finch, director, United States Bureau of Mines, and "The Right to Mine" by Robert M. Searls, attorney, San Francisco, and the usual notes on statistics, laboratory and library complete the number. Price of the bulletin is 60 cents postpaid, plus 2 cents sales tax to residents of California.

All publications of the Division of Mines are for sale at its San Francisco, Los Angeles, and Sacramento offices.

— 20 Years Ago — TAKEN FROM The Mining Journal AUGUST, 1919

The great tunnel leading from the surface plant to the 500-foot levels of the three working shafts at the Magma mine will be ready for use about January 1. In other words the work of driving this tunnel will consume approximately six months. All supplies for the mine will be taken through this tunnel which will be 1,800 feet in length when completed.

Captain W. V. DeCamp, well known in mining circles, has returned from New York City and again is with the Consolidated Arizona Smelting Company as field engineer with headquarters at Humboldt. Formerly he was superintendent of the Blue Bell, but resigned to enter the army. Since resigning his commission he has been taking a post-graduate course in mine engineering at the Columbia School of Mines, New York City.

The New Cornelia Copper Company is again increasing the working force, particularly in the steam shovel pits, an extra shift having been put to work there. This gives employment to about 50 men at that section of the company's property. The 500-ton experimental flotation plant will be ready for operation in about two months.

The Miami Copper Company continues to run at two-thirds capacity and no information is available as to when the remaining sections of the mill will be put in operation. The daily tonnage at the Miami mill, handled in four to six units, is averaging 3,800 tons. The concentrate extraction claimed is 87 per cent of the total copper content. During July the production of copper amounted to 4,000,000 pounds.

The copper market, after its rapid rise during the past few weeks, has now come to a stop, and the price quoted for spot delivery is 24½ cents. Buyers who have bought the copper for a rise see now enough profit to let go of some of their holdings, and this has stopped the further upward movement of the copper price for the time being. Considerable business has again been done for shipment abroad.

Cleanliness is a hobby of Major Stout, superintendent of the Copper Queen smelter at Douglas, and the spic and span condition of the plant has probably been responsible in a large measure for the diminishing number of accidents in the last few years.

Actual work has been resumed on the new concentrator of the Copper Queen company and the present plans are to push the work with all possible expedition to have it completed and ready for operation in about a year's time. The work is under the supervision of Engineer J. E. Lanning, with a staff of able men supporting. When completed the big concentrator will have a capacity of about 3,000 tons per day.

On July 25 the employees of Ray Con and the residents of Ray tendered a farewell reception to Mr. and Mrs. L. C. Cates, a farewell that will go a long way to show the "Big Chief" how much he was appreciated in that community. Cates and D. D. Moffat of Hayden left at the same time and now make headquarters at Salt Lake.

The market for quicksilver is very firm with little stocks to supply the market, and \$109.00 per flask is today's quotation.

Nuggets from the Western States

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

The fourth furnace at the smelter of the Phelps Dodge Corporation, Douglas, Arizona, has been placed in operation, bringing the plant up to capacity and increasing the working force by about 100 men, which makes the crew total approximately 950 men. Harry M. Lavender, Douglas, is general manager of the corporation. C. H. Cole is smelter superintendent.



Robert Black, 604 East Gurley Street, Prescott, Arizona, has acquired the Lorain shovel, four-bowl Ainalay machine, and Diesel electric plant formerly operated by J. D. Cornell on Big Bug Creek near Poland Junction. Black will use the equipment to work bench gravels on property of the Lynx Creek Placer Mine Company on a royalty basis. H. A. Savage, Box 408, Prescott, is manager of the Lynx Creek company.

A crew of men is engaged in repairing roads and in other rehabilitation work preparatory to a resumption of operations at the Borianna mine, 18 miles east of Yucca, Arizona. The property has been shut down since April, 1938. A new mill, which was completed just prior to the shutdown, is expected to go into operation about October 1. The Borianna employs from 110 to 125 men during normal operations. H. L. Veatch is manager of the property for the Molybdenum Corporation of America.

Underground work has been started at the Tennessee-Schuylkill mine, Chloride, Arizona, preparatory to placing the property on a production basis again. It is understood that from 45 to 60 days will be required to place the mine in readiness for active operations. The mill, which is ready for operation now, will not be started until work in the mine is on a steady basis. The property employed a crew of about 115 men prior to the shutdown in January. Jacob Schoder, Chloride, is general manager of the Tennessee Schuylkill Corporation.

O. H. Wall and Thomas J. Anderson, Box 325, Florence, Arizona, have taken over under lease the Silver Bell and Columbia claims of the Sunbeam Gold Mining Company and are now employing a crew of more than seven men. Two cars of silver-lead ore have been shipped and stoping operations continue. Further shipments to the smelter are also planned. Additional property of the Sunbeam company will also be taken over, including the power plant and mill. The new operations are carried on as the Silver Bell-Columbia Lease. Wall is one of the owners of the Talley-Wall mine near Superior, Arizona, and Anderson formerly operated the Arizona Apex mine.

A compressor is to be installed at the North Cross mine located 1 1/2 miles southwest of Oracle, Arizona, preparatory to

sinking a vertical working shaft south of the present one. From this shaft development will be extended laterally and vertically, crosscuts being driven to intersect other known veins. At present drifting on the vein is in progress at the 100-foot level and ore from development work is being stock-piled for later treatment. The vein is said to vary from six to nine feet in width and values include gold, silver, lead, molybdenum, and vanadium. A flow of 100 gallons of water daily is encountered at the 100-foot level. A crew of five men is employed under the direction of W. S. Bacon, Oracle, who holds the property under option from Tom Callas, owner, Box 89, Oracle.

The first hole drilled on lands of the Arizona Manganese Corporation which lie to the north of Maggie Canyon near the Bill Williams River is understood to have disclosed a bed of commercial ore 43 feet thick. The hole was drilled at a point 700 feet back of the outcropping face of the bed. This outcrop varies from 25 to 35 feet in thickness and extends for more than 3,000 feet along both sides of the canyon. Additional drilling is to be undertaken in the fall. The corporation has extensive holdings in the Artillery Peak mining district which lies north of the Bill Williams River in southern Mohave County, about 25 miles east of the Colorado River. Dwight E. Woodbridge, Sellwood Building, Duluth, Minnesota, is president of the corporation; F. W. Koehler, 1310 San Ysidro Drive, Beverly Hills, California, is secretary-treasurer; and D. D. Corum, 5972 Chula Vista, Hollywood, California, is director.

Foundations for the cyanide tanks have been completed at the Yarnell mine, Yarnell, Arizona, together with a new residence for the manager and an assay office. The mine was taken over recently by the Winslow Gold Mining Company, H. A. Funk, president, 501 Warren Avenue, Winalow, Arizona, and reconditioning of the property is progressing under the direction of Edison Thacker. The cyanide mill installed last fall at Kirkland, Arizona, by the Gallup Gold Mines, Inc., has been acquired by the Winslow company and is being moved to the Yarnell mine.

The Silver Coin Mining and Milling Company, L. W. Wixon, manager, Klondyke, Arizona, is preparing to retimber the shaft at the Silver Coin mine with a view to extending it to the 350-foot level, for the primary purpose of developing water for milling. Early erection of a 50-ton mill is planned and ore tests are being made to

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.

determine the type of plant best suited to the ore, which carries values in gold, silver, lead, and vanadium. The mine is owned by Dan Lewis, W. W. Craig, and J. B. DeCamp as trustees, and was formerly operated by the Verdun Consolidated Mines Company. The new company was organized by Miss Edna B. Montgomerie, 2022 Encanto Drive, Phoenix, Arizona, and associates.

A new double-drum hoist has been installed at the Alvarado mine of the Liberty Hill Gold Mines, Ltd., Congress, Arizona, to facilitate the handling of tailings. The company is employing a crew of 35 men and the cyanide mill is handling 93 tons of gold ore daily. Operations are directed by L. L. Farnham, Congress. Stoping and drifting are in progress on the 600-foot level, and preparations are being made for sinking a winze from the 1,400 to the 1,500-foot level.

Additional equipment has been installed, old equipment rehabilitated, and the property of the Arizona Quicksilver Mines has been placed on a production basis under the direction of L. E. Foster, Box 776, Phoenix, Arizona. The property is located in the Tonto Basin district eight miles north of Colcord Station on Sycamore Creek, and is being operated by the National Mercury Mines, Inc., H. L. Waldthausen, general manager, Box 1788, Phoenix, Arizona. A crew of 25 men is employed at present.

A compressor, Tugger hoist, and jack hammer have been installed at the property of the Keystone Divide Mining Corporation, John Warning, general manager, Oatman, Arizona, preparatory to sinking the shaft an additional 100 feet and drifting both directions on the vein for the length of the pay streak. Ore mined in present drifting operations along the vein is shipped to the Vivian mill adjoining the Keystone Divide property. A recent shipment of 12 1/2 tons averaged \$32 per ton. C. R. Watkins, Room 620, 210 West Seventh Street, Los Angeles, is president of the company.

A crew of nine men is engaged in development work at the Oro Fino mine near Georgetown, California, under the direction



of W. R. Coleridge Beadon, Hotel Marysville, Marysville, California. It is owned by Sam Collins, Garden Valley, California, and Ed Bathurst of Sacramento, California.

The property has been developed by a 220-foot adit; 50-foot winze; and a 100-foot north-south drift. Two portable gas-driven compressors supply power for mining operations. If present development work proves to be satisfactory, a pilot mill will be installed at a later date, when sufficient ore of commercial value is developed to assure at least six months' operations for the plant. Raises are being put up at either end of the drift to block out the ore body, which is nowhere less than 14 feet in width. The mine is under option to Beadon and J. Howard

Pearson is associated with him in its development. John Bartholf, Garden Valley, California, is foreman at the mine. It is understood that the European situation and restrictions on transfer of capital may cause temporary curtailment of operations shortly.

The 60-ton flotation plant of the **Black Hills Mining Company**, William D. Tam, president and general manager, Jackson, California, is operating at capacity. The gold ore is coming from stoping operations which are in progress on the tunnel level. The ledge is more than 200 feet wide with average backs of 165 feet. Preparations are being made for sinking from the tunnel level. A crew of 16 men is employed at the property. Peter Jovich, Jackson, is general superintendent.

Dredging operations are nearing completion at the **Moccasin mine**, Moccasin, California, and it is planned to move the equipment to a new location near Folsom, California, or to Plumas County in the near future. Malcolm L. Benoist, Moccasin, is superintendent for Harold Helling, 150 South Montgomery Street, San Jose, California, operator of the boat. Sixteen men are employed.

The 600-ton Huelsdonk concentrator at the **Ruby mine**, Goodyears Bar, California, is treating 200 tons of placer material daily. A slusher scraper is used to mine the material. Work is directed by L. L. Huelsdonk, resident manager, Goodyears Bar. Operating officials include A. R. Hinton, chief electrician and master mechanic; William Reed, Jr., safety inspector and foreman; and Eli Allen, foreman. A crew of 43 men is working at the property.

The concentrating plant outside No. 3 tunnel of the **New Idria Quicksilver Mining Company**, Idria, California, has been improved and now has a capacity of 400 tons daily. Mining for this mill is done by means of a dragline, using a Sullivan electric hoist. The material is sized to five inches by means of grizzlies, then screened and washed to one-half inch. The oversize is sorted on a belt which acts both as a sorting belt and as a waste conveyor. The minus one-half inch material is run through a Bendelari jig and a drag washer. Practically all water is recovered by means of a Wemco 14-foot thickener which was installed in July. The property is equipped with two five-foot Gould rotary furnaces with a capacity of approximately 200 tons per day. At the San Carlos property, recently taken over by New Idria, extensive development work is being done on the 300-foot level. A new headframe was constructed and the old shaft rehabilitated to make the new work possible. A crew of 135 men is employed under the direction of C. Hyde Lewis, general superintendent, Idria. Operating officials include John W. Judy, general foreman; W. L. Shaddock, mine foreman; Charles Converse, furnace foreman; W. O. Wagstaff, master mechanic; and E. A. Green, chief clerk and purchasing agent, all of Idria. H. W. Gould, Mills Building, San Francisco, is general manager.

The 150-ton flotation plant of the **St. Joseph Lead Company** is operating at ca-

capacity on gold ore from the **Sheepranch mine**, Sheepranch, California. The property is worked through a 2,350-foot shaft. A crew of 160 men is employed under the direction of F. H. Skeels, general manager, Sheepranch. Operating officials include W. T. Benson, mine superintendent; L. D. Yundt, mill superintendent; George Bartholomees, chief mine engineer; James McDonald, chief field engineer; H. A. Crandall, master mechanic; Claire Millage, chief electrician; Walter Heidrick, chief chemist; and Arne Waara, purchasing agent.

The **Salmon River Mines Company**, Callahan, California, has completed its lower tunnel to the ore body and the mill will now be moved to the tunnel portal. A new mill of larger capacity is planned for the property also. Production is scheduled to begin early in the summer of 1940. A crew of 10 men is employed at the mine under the direction of E. C. Latchem, president and general manager, Callahan. V. W. Peterson is secretary and purchasing agent.

A diamond drilling program is in progress at the property of the **Walker Mining Company**, L. F. Bayer, manager, Walkermine, California. The 1,800-ton flotation plant is handling approximately 1,300 tons of copper, silver, and gold ore daily. The mine is opened to the 1,200 level and has approximately 12 miles of mine workings. The working crew and staff total 431. Operating officials are W. T. Warren, Jr., mine superintendent; M. R. McKenzie, mill superintendent; Ralph Hayden, assistant mill superintendent; S. K. Droubay, chief geologist and mine engineer; C. C. Caldart, master mechanic; Bruce Whitney, safety inspector; R. E. Reed, chief clerk; all of Walkermine. J. B. Whitehill, secretary and purchasing agent, is located at 818 Kearns Building, Salt Lake City, Utah.

The 75-ton flotation-amalgamation mill at the **Brown Bear mine**, Deadwood via Lewiston, Trinity County, California, is treating 75 tons of dump ore daily. The mine is not being operated at present. The property, formerly known as the Gross and Street, is held under option by F. E. Yoakum, 472 Vernon Street, Oakland, California. It is owned by E. E. Erich. A crew of 11 men is employed in mill and surface operations under the direction of E. A. S. Whittard, Deadwood.

A new 1¼-yard dragline has been installed by the **Dakins Company**, Robert D. MacAfee, Jr., superintendent, Nevada City, California, in order to increase the dredge feed from 1,000 yards per 20-hour day to 1,500 yards. Flotation units are also being installed on the dredge to permit the extraction of values in black sands, removed from the gravel by means of Bendelari jigs. Fourteen men are employed.



Henry L. Day, Box 1009, Wallace, Idaho, is president of the company.

A crew of eight men is employed at the **Treasure Box mine**, Nevada City, California, under the direction of Frank Dillon, president and general superintendent, Nevada City. F. M. Dillon, Grass Valley, California, is consulting engineer. A cross-cut tunnel is being driven at present. The 20-ton amalgamation plant is handling ore from the mine, which carries values in gold, chrome, and talc.

A new 600-foot vertical shaft equipped with cage and skip have been completed at the **Tropico mine**, Rosamond, California, and a new 300-foot inclined winze has been completed at the **Ruth mine** 14 miles north of Trona, California. Further shaft sinking and drifting are planned for the two mines and it is also proposed to increase the milling capacity of the Ruth plant. Both mines are operated by Burton Brothers, Cecil F. Burton, president, and H. Clifford Burton, general manager, Rosamond. The mine crew totals 70 men and the mill is employing 25 men. The 175-ton cyanide mill at Rosamond is operating at capacity, treating gold ore. A. H. Johnson is general superintendent at the Tropico, T. L. Loomis is mill superintendent, N. P. Browne is chief mine engineer, and George McNamee is purchasing agent.

Operators of the **Cherokee mine**, Greenville, California, have acquired mining claims adjacent to the mine from George F. Schott, 320 East First South Street, Salt Lake City, Utah. Extensive diamond drilling is being done and an old shaft is being rehabilitated. Frank Humphrey is manager of the Cherokee.

A Washington logging hoist, electric welding equipment, and a light plant are being installed at the **Smith and Black hydraulic mine** located near Happy Camp, California. Frank Smith is the operator of the property.

C. E. Reagan and sons are continuing development work at their **China Point** property located six miles above Happy Camp, California. Several hundred feet of drifts and cuts have been run in ancient river channel and the pay streak encountered is reported to run up to \$5 a yard. This property covers a tunnel site, which makes it possible to divert the water and work the river bed.

The new milling plant at the property of the **Mariposa-Washington Mining Company**, E. Bradford Newcomb, manager, Hornitos, California, is operating 16 hours and is crushing approximately 50 tons of ore daily. A water supply sufficient for two shifts has been developed, and as soon as the fall rains start, it is planned to place the plant on a 24-hour basis.

A carload of ore shipped recently from the **Middle Butte mine**, Mojave, California, is reported to have carried values averaging \$33 per ton in gold. The mine has been taken over under long-term lease by William Harwood, Box 364, Mojave. It was formerly operated by Walter Trent and more recently has been under lease to George Holmes, discoverer of the Golden Queen mine. In a four-year period it is reported to have produced approximately \$700,000 in gold ore.

A dividend of 50 cents a share was paid by the **Newmont Mining Corporation**, 14 Wall Street, New York City, on September 15 to stockholders of record August 31. The corporation is principally a holding firm with stock interests in a number of companies.

S. J. Donaldson of Georgetown, California, is negotiating for sale of his **Central Midway** and **South Sunnyside** claims on the Ralston Divide. The properties are developed by two tunnels, 200 and 176 feet long, and two shafts, 40 and 176 feet in depth.

A small crew of men is engaged in sinking a two-compartment shaft on the **Bert Simmons** mining property west of Kelsey, California. The new shaft is expected to cut the ledge at a depth of approximately 150 feet. The mine has been worked for the past several years, during which some high-grade ore was encountered.

E. E. Hemrich of Seattle, Washington, is operating his dry placer machine on the **Roberts** group of claims, which he holds under lease from the **American Gold and Tungsten Corporation**, A. A. Turner, president, Box 287, Randsburg, California. The machine is handling about 400 yards of gravel daily. It is equipped with three recovery units, each with a capacity of 20 yards per hour. Out of 50 yards, about 120 pounds of concentrates are secured, and the gold recovery is said to average from 75 to 90 per cent, while that of scheelite is between 60 and 70 per cent.

Operations are on a 24-hour basis and approximately 1,500 cubic yards of material are handled daily at the property of the **Frederick Gold Mining Corporation**, Fred A. Finkledey, president and general manager, Willow Creek, California. A crew of 19 men is employed. Equipment includes a Judson-Pacific washing plant, a Northwest dragline, and an Ainalay bowl system. Both Diesel and electric power are used, with a combined capacity of 450 horsepower. The company plans to substitute a bucket-line dredge for main operations on the 400-acre tract of ground, and the present equipment will be used for newly purchased or leased, smaller properties. Roy Spivo is general superintendent; O. C. Baird, chief electrician and master mechanic; Duncan McIntosh, foreman; and Alfa Gastman, chief clerk; all of Willow Creek.

A 20-ton flotation-amalgamation plant has been installed at the **Buena Vista No. 2** mine near Redding, California, under the direction of H. G. Graves, owner, Box 25, Redding. The new plant includes a Straub ball mill, flotation cells, mechanical jig, blankets, and Dorr classifier. Power is furnished by an 85-horsepower Diesel. A crew of six men is employed and continued development is planned for the property.

Present work at the **Morning Star** mine north of Cima, California, is confined to development and to blocking out ore. Drifting is in progress off the 215-foot level of the inclined shaft. H. V. Hughes, Cima, is general manager, and Erle Irving is chief geologist. A crew of nine men is employed. The mine was taken over recently by Erle P. Halliburton, Inc., 907 National City Bank Building, Los Angeles,

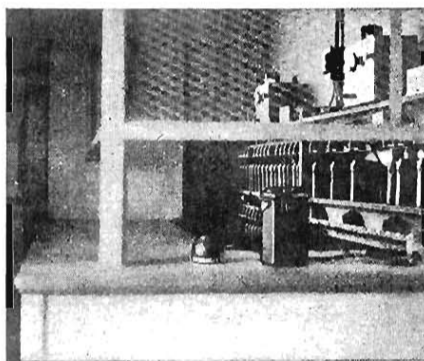
California. John B. Mighton of Cima and Howard T. Brown of Los Angeles are owners of the property.

Daily production of **Natomas Company**, gold dredging firm, is approximately 81-230 yards. Continuous bucket dredges are used and recovery is made by means of amalgamation through jigs and riffles. R. G. Smith, Natoma, California, is general superintendent, and other operating officials include C. K. Sears, superintendent; J. B. Price, master mechanic; W. W. Wall, chief electrician; C. J. Gallagher, safety inspector; and Dan McHugh, chief clerk; all at Natoma. Thomas McCormack, Forum Building, Sacramento, is president and general manager of the company. A. L. James is secretary, and I. L. Golden is

purchasing agent, both making their headquarters at the Sacramento office.

The 300-ton flotation-amalgamation plant of the **Argonaut Mining Company, Ltd.**, Alex F. Ross, superintendent, Jackson, California, is treating approximately 270 tons of gold ore daily, with a crew of approximately 250 men employed. The mine is worked through a 6,300-foot inclined shaft. Operating officials include Robert Shea, mine foreman; Earl M. Smith, mill foreman; William F. Peters, master mechanic; T. J. Burrow, chief electrician; W. D. Manning, purchasing agent; and J. L. Fontenrose, timekeeper; all of Jackson. At the company's Pacific mine, located at Plymouth, California, a tailings plant was placed in operation in June to treat the old tail-

No Expensive "Time-Outs" with **WHEAT** Electric Cap Lamps



Section of Canadian lamp house, showing part of the 116 WHEAT Electric Cap Lamps installed here.

Your miners don't have to stop work to adjust, repair or refill WHEAT Electric Cap Lamps. WHEAT light never fails. It burns steadily, *brightly*, to the end of the shift. There's no flickering—no fading. The light from a WHEAT Cap Lamp is practically as bright at the end of the shift as at the beginning.

If the main bulb burns out, an emergency bulb can be switched on instantly. This advantage is an *exclusive* feature of the WHEAT Cap Lamp.

You Get BRIGHTER Light with WHEAT

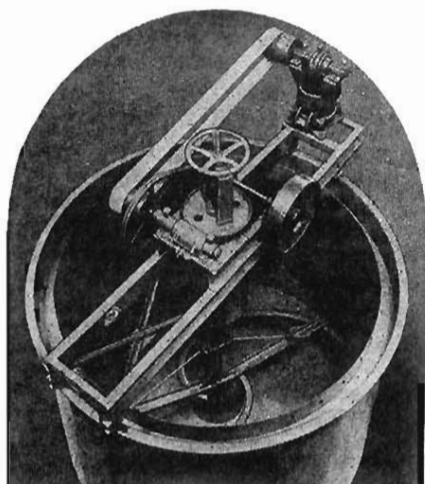
Scientific tests show that WHEAT gives MORE light than other cap lamps. Because it gives this *brighter* light and also cuts down time-outs, the WHEAT Electric Cap Lamp is a help in increasing tonnage per man-day and in reducing accidents. That's why more and more mines are equipping their underground men with WHEAT.

It will pay you to investigate the many advantages offered by WHEAT Cap Lamps. Send for full information.

Fill Out and Mail the Coupon

Distributors for Western U. S. A. and British Columbia: **E. D. BULLARD Co., San Francisco, California**

KOEHLER MANUFACTURING COMPANY MJ 9-30-39
 Marlboro, Massachusetts, U. S. A.
 Without obligation on my part, send full information on WHEAT Electric Cap Lamps.
 Name..... Title.....
 Company.....
 Address.....



LARGE MINING COMPANIES

use Denver Spiral Rake Thickeners because they have cut steel gears, lowhead superstructures, spiral rakes (for higher raking capacity), and bolted steel tanks. Write today for Bulletin No. 3628 describing thickeners and Bulletin No. 3703-A on Denver Low-head Diaphragm Pumps.

"Standard and Reliable"

DENVER EQUIPMENT COMPANY
1400 - 17th Street - Denver, Colorado



ings. The plant was installed at a cost of approximately \$60,000 and is now handling about 500 tons daily. Both flotation and cyanidation are used.

Bramley Leo Melvill, who has been testing ground between North San Juan and Nevada City, California, for a large South African mining company, is reported to have discontinued operations. However, it is understood that the company continues to hold the options on the ground tested. Extensive keystone drilling was done near Columbia Hill.

New equipment recently shipped to the Caliente mine at Caliente, California, by the California Engels Mining Company, includes an amalgam barrel, concentrating tables, a jig, and material for an additional 30,000-gallon water supply. The plant has been handling from 20 to 25 tons of ore daily with one working shift, and the new equipment is expected to increase its capacity to 50 tons daily. It is understood that 22,500 tons of ore have been developed and an additional 18,000 tons have been partially developed. Operations are centered on a shoot which extends for 1,200 feet. Work at the Caliente is directed by R. E. Frasch. Offices of the company are located at 350 California Street, San Francisco. A. J. Heller is president.

Alaska Juneau Gold Mining Company, P. R. Bradley, president, 1022 Crocker Building, San Francisco, California, reported an estimated profit of \$150,600 for August, before deductions for depreciation, depletion, and income taxes, as compared with \$97,100 in July, and \$175,900 in August, 1938. The increased August revenue, which represents a gain of 55.1 per cent over July, is due to expanded tonnage of ore mined and trammed to the mill, combined with higher revenue and decreased operating expenses per ton. Results for August brought the total estimated profit for the first eight months of 1939 to \$809,100 before depreciation, depletion, and income taxes, as against \$1,368,900 in the like period of 1938. Tonnage mined and trammed to mill totaled \$404,560, as compared with \$378,230 the preceding month. Gold production totaled 11,914 fine ounces, compared with 10,400 ounces in July, and the total revenue per ton was \$1.04 as against 97 cents in July. Operating expense per ton dropped from 72 cents to 68 cents, while operating profit climbed from 25 cents per ton in July to 36 cents in August.

Five men are employed at the Golden Girl mine located three miles north of Soulsbyville, California, and development is proceeding under the direction of R. E. Maxwell, mine superintendent, Box 96, Twain Harte, California. Perry Fitzgerald, Soulsbyville, is mine foreman. The mine is opened to a depth of 85 feet, and it is planned to sink a winze an additional 100 feet. There are approximately 450 feet of mine workings. Values are in gold and silver. Power is furnished by a 35-horsepower gasoline engine.

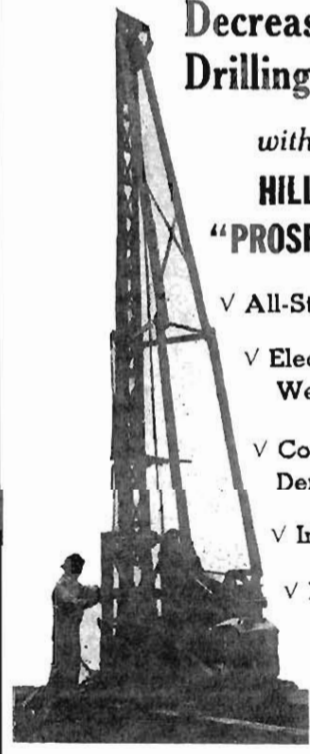
A 600-foot tunnel is being driven at the property of the Glacier Mining Company, William J. McMillan, general manager, Seneca, California, for the purpose of cut-

ting the channel. Present work is being concentrated on development. Recovery of gold and silver values is made by means of sluices. Power for mining operations is furnished by two Diesels, which have a combined capacity of 110 horsepower.

Development work is proceeding at the Reed quicksilver mine located about 25 miles north of Monticello, California, and a crew of nine men is employed under the direction of Ray D. Butterfield, general superintendent, Monticello. J. M. Forrest is chief mine engineer at the property. The mine was taken over under lease recently by the Bradley Mining Company, Worthen Bradley, president, 922 Crocker Building, San Francisco. It is owned by George A. Newhall, Newhall Building, San Francisco. A 60-horsepower oil engine handles the power needs at the mine.

Following completion of its financing program, Peckham Hill Gold Mines, Inc., George B. Burnham, president, 106 East Second Street, Reno, Nevada, is preparing to extend its long drainage and transportation tunnel for the remaining 600 feet required to reach its objective. The property, which is operated under lease from the Mayflower Gravel Mining Company, is located near Foresthill, California. Approximately 3,500 feet in from the portal, the tunnel is scheduled to reach a point 26 feet below the bottom of the company's 241-foot Blue Gravel shaft, sunk many years ago to the channel bed. Connection with this shaft by means of a raise from the tunnel will provide an outlet for channel water, as well as for the gravel which will be extracted in drift mining. It is estimated that 75 days will be required to extend the tunnel the necessary 600 feet. In order to expedite the work a compressor and two drifters are to be provided. A four-inch air line is already available to the tunnel breast. Upon completion of the present development program, it is planned to construct a washing plant of substantial capacity below the portal. Property of the company embraces some 1,200 acres and includes the Peckham Hill mine and the Spring Garden patent. A considerable stretch of dredging ground on Todds Creek, one of the deep gulches draining from the Peckham Hill mine to the American River, is also held, and this ground can be worked by dredge or by hydraulic methods without conflict with the debris laws. At a point 1,000 feet in from the portal, a well-defined quartz vein was intersected diagonally, and an engineer's report has recommended exploration of this vein in the belief that it may prove to be productive of profitable gold ore. Aside from the main tunnel, the property is developed by more than 2,000 feet of drifts on bedrock, prospecting laterals, and raises. C. L. Rowe, Box 997, Auburn, California, is mine superintendent.

R. H. Enoch, Grand Hotel, El Paso, Texas, is considering construction of a 200-ton reverberatory smelter near Darwin, California, to handle custom ore. Base metals will be treated in a plant having a 100-ton furnace, and separate units will be provided for the handling of complex ores.



Decrease Your Drilling Costs..

with the
**HILLMAN
"PROSPECTOR"**

- ✓ All-Steel
- ✓ Electrically Welded
- ✓ Completely Demountable
- ✓ Inexpensive
- ✓ Light
- ✓ Efficient

Write for Detail and Prices

C. KIRK HILLMAN CO.

Factory and Sales Office
3201-1st Ave. So.
Seattle, Wash.

Sales Office And Stock
111 Sutter St.
San Francisco

A crew of four men is engaged in development work at the property of the **Golden Butte Mining Company, Ltd.**, Box 25, Mojave, California. The mine is developed by seven tunnels and has a total of 1,300 feet of mine workings. Values are in gold and silver. L. Meuer is president of the company. Fred Gerbracht, with the **Compagnie Aramayo de Mines en Bolivie** during the past three years, is engineer.

The **Midland Company**, F. A. Hoyer, general manager, Box 244, Lincoln, California, is handling approximately 2,500 cubic yards of gravel daily at its property located near Lincoln, California. The property is worked by means of a dragline dredge, equipped with riffles and trommel screen. E. C. Dick is chief geologist and Ira Stearman, master mechanic, both of Lincoln. C. B. Noyes, 733 Dwight Way, Berkeley, California, is president of the company.

A crew of nine men is employed by the **E. L. Lilly Company**, Ernest L. Lilly, operator, 828 North Tuxedo Avenue, Stockton, California, in dragline dredge operations in the Jenny Lind district near Wallace, California.

A. C. Fox of Nevada City, California, and O. A. Richardson of Grass Valley, California, are engaged in sampling the underground workings of the **Sunflower mine** located in the Rough and Ready district west of Grass Valley. The mine, which is held under lease by Fox and Richardson, was recently unwatered under their direction. The property is owned by Mrs. Yarda Looke, 2817 K Street, Sacramento, California.

The 2,000-foot level has been reached in shaft sinking operations at the New Brunswick mine of the **Idaho Maryland Mines Corporation**, Grass Valley, California, which will reach an ultimate depth of 2,350 feet below the collar. At that point it is planned to link the New Brunswick with the Idaho Maryland mine by means of a long drift, and work on the drift is proceeding eastward from the 2,000 or main operating level of the Idaho Maryland. The New Brunswick continues to produce approximately 800 tons of ore daily for milling. Albert Crase, Grass Valley, is general manager of the company.

A production of approximately 100 tons of gold and silver ore daily is reported at the Big Blue mine of **Kern Mines, Inc.**, Kernville, California, under the direction of Eirind Knutsen, Box 77, Kernville, California. The mine is opened to a depth of 500 feet and there are approximately 20,000 feet of mine workings. A crew of 40 men is employed. Roland Tognazzini, 605 Market Street, San Francisco, California, is president of the company.

Rhoads Grimshaw, Route 1, Box 149, Auburn, California, and associates are assembling equipment for a large floating dredge operation.

A plant will be installed by Dave Rosekans of Oakland to treat tailings of the **Midas mine** near Knob, Shasta County, California, owned by Adele Moore. It is understood that other interests are also considering reopening the mine. Rosekans is making his headquarters at Knob.

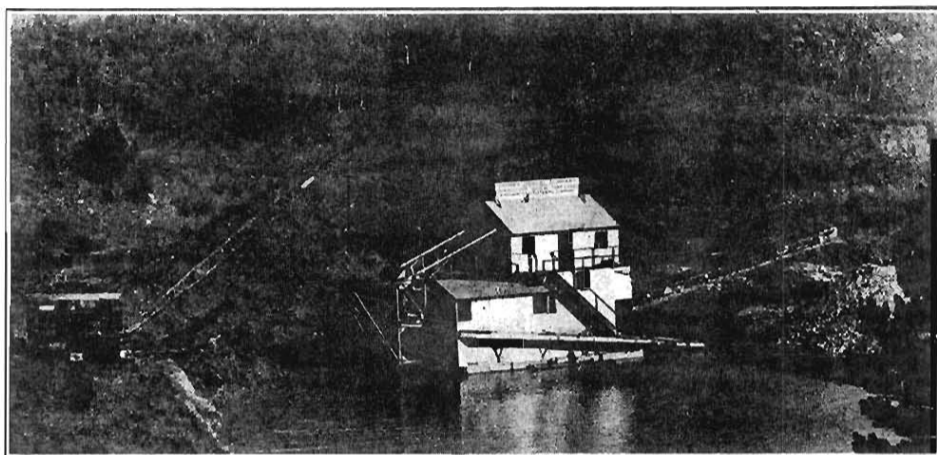
Installation of a compressor and a new trommel is planned for the **Canada Hill gravel mine** located 25 miles east of Foresthill, California. The mine, formerly known as the Beauty, is being operated under lease by Lawrence Schmo'l and associates of Foresthill.

Thomas Cline Brown, 30 Cerritos Avenue, San Francisco, California, has made application for permission to divert 30 cubic feet of water per second from Little Slate Creek for mining and domestic purposes. Estimated cost is \$3,000. Brown is the owner and operator of the **Union-Keystone Consolidated Placer Mines**, Gibsonville via La Porte, California. Work at the mine is directed by Parker H. Mason, superintendent.

Application has been filed by William, Dan, and Lee Sagaser, Sawyers Bar, California, for a permit to divert 25 cubic feet of water per second from Olsen Creek for mining and domestic purposes at an estimated cost of \$5,000. John A. Thomas, Clear Creek, California, has applied for two separate diversions of three cubic feet per second each from Kings Creek. The water is to be used in mining operations. V. MacFarland, 808 Second Avenue, Seattle, Washington, has applied for permission to divert three cubic feet of water per second from Elk Creek in Siskiyou County, California, for mining and domestic purposes.

Russell H. Harris and Arthur W. Parker, operating the **Gold Crest** placer mine on

One **BODINSON DREDGE** Sells Another



REPEAT ORDERS . . . from satisfied customers, is the best possible evidence of the fact that Bodinson Manufacturing Company, the pioneer in dragline dredge construction, is producing the most successful dredges in the industry. Every individual dredge is properly designed in the first place to suit the actual field conditions where it will operate, in order to produce the greatest possible net recovery . . . and every individual dredge is built to "stand up" under constant three-shift service.

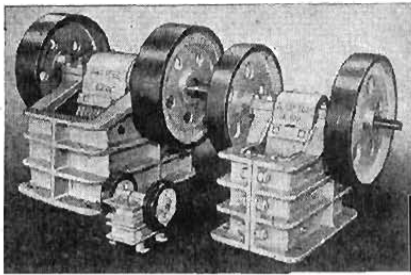
"DRAGLINE GOLD DREDGES"

. . . a 24-page illustrated book, chock-full of authentic, valuable dragline dredge information, will be sent to you promptly upon request.

World's Largest Builders of Dragline Gold Dredges

BODINSON
MANUFACTURING COMPANY
2401 BAYSHORE BLVD. SAN FRANCISCO

HASSELL JAW CRUSHERS



WHERE CAN YOU BUY A ROLLER BEARING CRUSHER FOR LESS?

9" x 16"	\$950.00
8" x 10"	495.00
5" x 6"	225.00
Lab.	65.00

BULLETIN NO. CR 139

HASSELL ENGINEERING COMPANY
ENGINEERS • CONSULTANTS • MANUFACTURERS
COLORADO SPRINGS, COLORADO

For exceptional convenience,
courteous service . . . and
reasonable rates, choose

600
ROOMS
\$2.50
UP

HOTEL PHILADELPHIAN

DANIEL CRAWFORD, Jr., Manager

39th & Chestnut Sta., Philadelphia, Pa.

APACHE POWDER COMPANY

Manufacturers of High Explosives for Domestic and Export Trade. All grades of Gelatin and Ammonia Dynamites. Quarry and Grading Powders, Distributors of Blasting Caps, Electric Detonators, Fuse and Blasting Accessories.

Plant and General Office
BENSON, ARIZONA

Title Guarantee Building
411 West Fifth Street
LOS ANGELES, CALIFORNIA

FLEXIPIPE

The improved flexible tubing for
mine and tunnel ventilation

The original makers of flexible air tubing now offer the latest improvement in flexible tubing design. This is FLEXIPIPE with our new rope seam method of suspension.

Send for free sample and full information.

BEMIS BRO. BAG CO., ST. LOUIS, MO.

Dutch Creek near Junction City, California, have applied for a permit to divert 2.5 cubic feet per second from an unnamed stream tributary to Maxwell Creek for mining and domestic purposes. Estimated cost of the diversion is \$1,000. Work has been completed on construction of a road to the mine and a diversion dam and flume. It is planned to use two hydraulic monitors in working the property.

The shaft at the property of the Alabama California Gold Mines Company, William A. Beaudry, general superintendent, Penryn, California, is being extended to the 1,000-foot level. The three-compartment shaft was recently completed to the 800-foot level. Approximately 300 tons of ore are mined daily on the 350, 500, 650, and 800-foot levels. A total of 800 feet of drifting has been done on the 800-foot level and the vein is said to be strengthening both as to width and values, heads now averaging \$8.50. Approximately 110 men are employed at the mine.

Additional development work is planned for the Puckett Brothers drift gravel mine located on Big Butte Creek 23 miles east of Chico, California. Following a geophysical survey made recently by W. A. Henderson of San Jose, California, it has been decided to extend the drift an additional 800 feet, at which point it is expected to cut the channel. Under the direction of Barney W. Hettel, superintendent, two shifts had driven the tunnel to a depth of 1,300 feet before the channel was lost.

The Stagan Mining Company, Roy Stacy, manager, operating near Jenny Lind, Calaveras County, California, has recently installed a P&H 700-B, 1½-yard dragline. The newly acquired equipment will increase the capacity of the present dry land placer plant. The plant was taken over by Stacy from the Calaveras Properties, Inc., about a year ago.

The old Belmont mine in the Goldstone district near Barstow, California, is now on a production basis, treating 25 tons of \$14 ore daily. The new mill, which was installed under the direction of Charles G. Patrick, mining engineer, 737 North Lafayette Park Place, Los Angeles, California, consists of a crusher, elevator, bin, feeder, ball mill, plates, and classifier in closed circuit, followed by a Groch deep-cell flotation system. Approximately 70 per cent of the gold and silver is recovered in the amalgamation process and an additional \$3.50 in gold and silver is recovered in the flotation cells, leaving a remarkably small tailings loss. The property was recently reopened under a lease arrangement by Art Beale.

A Diesel electric generator is being installed at the Hot Water mine, Graniteville, California, to provide power for operating the mill, pump, compressor, and hoist. Water power is available for eight months of the year and during the balance of the time gasoline is used. The present five-stamp mill is to be enlarged to 10 stamps or more, and buildings are being constructed to house the mill and concentrators. At present the mill is handling 15 tons of gold and silver ore daily. A crew of seven men is employed at the property

under the direction of W. L. Baker, president and general manager, Graniteville. J. L. Jackson is general superintendent and Glen Chapman is chief mechanical engineer. The mine is being worked under lease from the Betty Anne Gold Mining Company.

Hite Mines, Inc., a closed corporation, has been formed to operate the Hite mine located on the south fork of the Merced River 25 miles northeast of Mariposa, California. The mine was formerly operated by Norman Whitmore, 417 South Hill Street, Los Angeles, California, who is also associated with the new company. Compressors and a drill have been installed at the property and ore is being blocked out. Milling operations have not yet been started. K. G. Cole, Box 32, Incline, California, is superintendent at the mine.

Ore tests are being made at the old Jim mine near Graniteville, California, to determine the best method of recovery. The lease on the property, formerly held by Jim Consolidated Mines, Inc., has been taken over by Patricia Jim, Inc.; F. C. Hyers, president, and following the test period, the new operators may decide to install a flotation plant. Hyers is directing work at the mine. Dixon SoRelle is vice-president, and Joseph F. Sauers, 590 North Wilcox Street, Los Angeles, is secretary-treasurer.

Roy F. Rosenbush, owner of the Chloride mine at Dedrick, California, plans the installation of a small jig in the near future to replace a concentration table at the mine. At present an intermediate drift is being run on a 10-inch vein of ore averaging \$25 in gold, and about 2½ tons per day are treated in the amalgamation plant.

Thirty tons of gold ore daily are produced at the Sugarman mine of the Bald Mountain Mines, Inc., Sonora, California, under the direction of Ralph H. Butler, general manager. The 20-ton amalgamation plant is treating six tons daily. A 300-foot drift on the 450-foot level is being extended to cut 10 known ore shoots, and raises have been started on three shoots. Six men are employed.

The El Dorado Crystal mine, Shingle Springs, California, is producing approximately 100 tons of gold-silver ore daily, which is treated in the 125-ton cyanide plant. A crew of 55 men is employed under the direction of Benoni Lockwood, Jr., mine superintendent, and William A. Crowfoot, mill superintendent, both of Placerville, California. Joseph David, Placerville, is mine foreman; George Loram, Placerville, is assayer; and Charles M. Geller, Shingle Springs, is chief electrician and mechanical engineer.

Ore sampling \$70 per ton in gold is reported to have been encountered on the 3,100-foot level of the Sheepranch mine, Sheepranch, California, operated by the St. Joseph Lead Company. A wide vein is reported to be in sight and it is understood that the company is considering plans for sinking the shaft to the 3,500-foot level. Four miles of open flume have been replaced by a pipe line, a powerful pump has been installed at the 300-foot level, and other improvements have been completed. A crew of 200 men is employed

at the property. Operations are directed by Frank H. Skeels, general manager.

Development on the 3,400-foot sublevel of the **Central Eureka Mining Company**, Sutter Creek, California, has cut a vein of ribbon rock at a point 281 feet in on the crosscut. The vein is six feet, six inches on the north side and seven feet on the south side. The casing, of stone, will permit economical mining with no dilution from the fault. It is planned to extend the crosscut 25 feet further west, following which drifting will be undertaken both north and south on the vein. C. C. Prior, 111 Sutter Street, San Francisco, is president of the company. James Spiers is superintendent at the mine.

Installation of a 50-ton ball mill is planned at the **Arrowhead** mine near Grass Valley, California, which has been under extensive development since last May. The mine is operated under lease by J. L. Nielsen of Grass Valley, and is owned by Charles Kitts of Town Talk. It is located near Greenhorn Creek on the You Bet road. The new mill is expected to be in operation by November 1. In the meantime development work will be continued in the tunnel, which is at present in about 63 feet. The present four-stamp mill will be used as an auxiliary crusher when the new ball mill is installed. The ore is free milling, requiring no flotation or cyanidation. There are said to be nine ledges located on the property, ranging from two inches to 18 inches in width. The average width is six inches and the average value of the ore is \$40 per ton.

It is reported that on a motion of the C.I.O., the long drawn-out case of the National Labor Relations Board against the **Golden Cycle Corporation** has been dismissed. The case, which was an outgrowth of labor trouble which started in June, 1937, was appealed by the mining company last December to the United States circuit court of appeals. The Golden Cycle company, headed by Merrill E. Shoup of Colorado Springs, Colorado, has extensive mining interests in the Cripple Creek district and operates the Golden Cycle plant at Colorado City, besides operating fuel mines and railroads. The company reports a marked improvement in all branches of its activities for the first seven months of 1939 as compared with the like period of 1938. A regular quarterly dividend of \$1 a share was paid September 10 to stock of record August 31, totaling \$187,000. The company paid four such dividends last year.

COLORADO

Victor Stolz of Albuquerque, New Mexico, recently leased the **Uncle Sam** mine on the north slope of Bull Hill in the Cripple Creek district of Colorado and is starting development work. The property, owned by H. Alex England, 2082 South Lincoln Street, Denver, and Alex England of Colorado Springs, has been opened to a depth of 700 feet. About three men are employed.

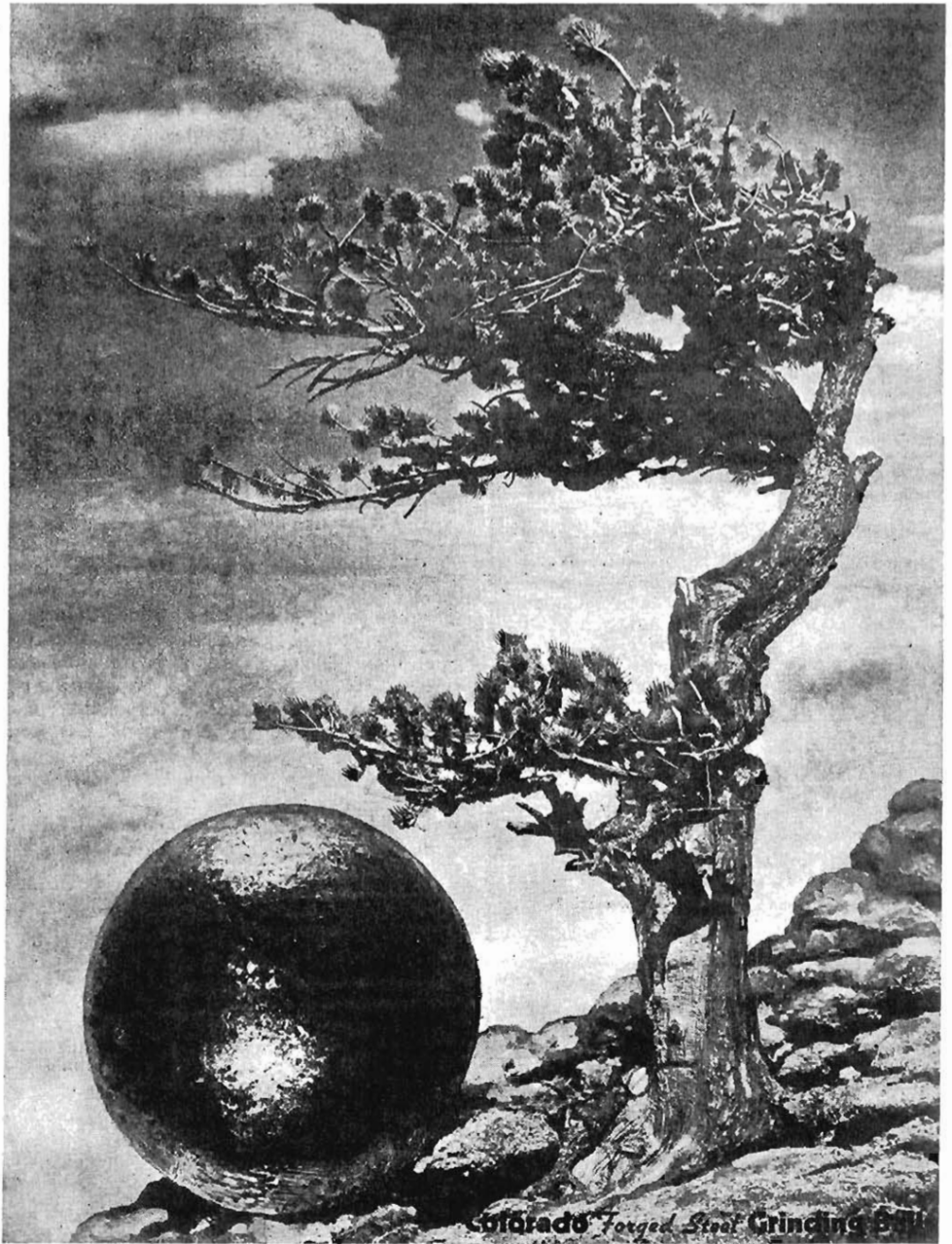
Production was suspended August 1, 1939, by the **Blue River Company**, Erland

F. Fish, Room 721, 84 State Street, Boston, president, because of the present bankruptcy proceedings of the **Royal Tiger Mines Company** from which the **Blue River** concern is leasing. The placers are located near Breckenridge, Colorado, and have been providing employment for about 35 men. Horace E. Hildreth, 6 Linnaean Street, Cambridge, Massachusetts, is vice-president and general manager and Samuel Usher, II, 84 State Street, Boston, is secretary-treasurer. The operating staff at Breckenridge includes: G. R. Johnson, superintendent; J. B. Traylor, engineer; O. J. Dodge, master mechanic; T. D. Prier, chief electrician; and T. E. Allen, chief clerk and office manager. John A. Traylor, 1440 Steele Street, Denver, is consulting engineer. The dredge was recently re-

floated and repaired after having sunk. Riffled sluices were replaced by placer jigs and a ball mill, classifier, amalgamator circuit installed to handle jig concentrate. Prior to the shut down the 9½-cubic foot dredge produced 3,000 to 4,000 yards daily, milling capacity being 4,000 to 5,000 yards.

The **Silver Plume Mines, Inc.**, John A. Smith of Silver Plume, Colorado, president and general manager, plans to extend the **Burleigh** tunnel 450 feet to make possible the economical operations of its properties in Clear Creek County near Silver Plume 50 miles west of Denver. A compressor house and blacksmith shop will be constructed and additional mining machinery installed. Changes will also be made in the company's 150-ton **Terrible** mill. Holdings include the **Terrible**, **Mendota**, **Seven**

BOTH HAVE RECORDS OF ENDURANCE



The Colorado Fuel and Iron Corporation

GENERAL OFFICES: DENVER, COLORADO

STEEL WORKS: PUEBLO, COLORADO

Only
85 lbs.,
but MAN...
WHAT A
PUMP!



The
BYRON
JACKSON
SINGLE-STAGE
PNEUMATIC SPONGE
CAN'T BE BEAT FOR
"Mopping-Up" Service

This little pump can be carried on a man's back, since it weighs only 85 lbs., but when it's set down and connected, it does a giant's work — 300 gallons per minute against a 25-foot head, or 120 gallons per minute against a 57-foot head, or 75 gallons per minute against a 125-foot head with only a 90-pound air pressure.

This Byron Jackson Single-Stage Pneumatic Sponge is easily set up or dismantled and will operate in any position. It is sturdily constructed with a two-port, non-clogging hardened impeller that passes $\frac{3}{8}$ inch solids and lowers the water to within 3 inches of the bottom. This design provides maximum resistance to abrasives, such as sand, pulverized rock, etc.

Byron Jackson Co., Dept. MI-143
P. O. Box 1307 Arcade Station
Los Angeles, California

Please send me complete information about the
Byron Jackson Single-Stage Pneumatic Sponge.

Name _____

Company _____

Position _____

City _____ State _____

Established 1872

BYRON JACKSON CO.

Box 1307 Arcade Station, Los Angeles, California.
Sales offices: New York, Pittsburgh, Chicago,
Atlanta, Houston, Salt Lake City.

BYRON JACKSON
CENTRIFUGAL
PUMPS
Estab 1872
FOR EVERY SERVICE

investigated, prospecting and preliminary work having been started already.

Frederick W. Horton, who has been investigating the mineral resources of Trinity County, California, for the U. S. Bureau of Mines, has been transferred from Weaverville, California, to Casper, Wyoming, where he will assist in the development of mineral deposits under the strategic minerals bill recently passed by Congress.

Harold Cogswell, assistant general superintendent of Demonstration Gold Mines, Ltd., Baguio, Mountain Province, Philippine Islands, has resigned from that company. Cogswell has been with Demonstration for the past year and a half and before that worked for Benguet Exploration, Inc., in Baguio where he was engaged in consultation work.

Paul G. Brislawn of Wallace, Idaho, has resigned as purchasing agent, accountant, and assistant treasurer of the Callahan Zinc-Lead Company. He will make his home in San Francisco, where he is employed in the purchasing and accounting department of the Goldfield Consolidated Mines Company, 421 Crocker First National Bank Building, whose mine holdings are in Nevada.

S. H. Ash, who has held the position of district engineer for District I in the safety division of the U. S. Bureau of Mines at San Francisco for some time, has been transferred to Wilkes-Barre, Pennsylvania, as district engineer of District B. Included in District B are the anthracite region of eastern Pennsylvania and safety activity in tunneling and mining in New York, New Jersey, and the New England states.

OBITUARIES

George M. Land, pioneer mining man of Dos Cabezos, Arizona, died early in September at the age of 72. He owned mining claims in the Dos Cabezos district.

W. T. Clary, for the past four years master mechanic at the Golden Queen Mining Company, Mojave, California, died recently at Long Beach, California, while on vacation.

Gustavo E. Trager, a resident of Mexico for many years, died July 10 at the American Hospital in Mexico City. He was president of Los Arcos Smelting and Mining Company at Zacualpan.

Stephen S. Wold, 76 years old, industrialist, banker, and president of the Tom Reed Gold Mines Company, Oatman, Arizona, died September 23 at his summer home in Balboa, California. He had been president of the Tom Reed Company for a number of years, and was also a leading figure in the development of the Santa Fe Springs and Huntington Beach, California, oil fields. He was a vice-president of the Security National Bank of Pasadena.

Ira D. Travis, 80, of Salt Lake City, Utah, died at his home in Salt Lake September 12, 1939. Going to Utah in 1898, Travis was one of the pioneers of the mining industry in Utah. Until 1933 he was vice-president of the Eureka Standard Con-

solidated and Tintic Standard mining companies and affiliated concerns. In 1933, at the death of E. J. Raddatz, he became president. He received his first college degree in Albion College and earned his master's degree from the University of Michigan in 1894. His doctor's degree was granted him by the same institution in 1897.

Harold Edward Robinson died September 22 at his home located at the Gum Tree mine, Mojave, California. He was 55 years old. Credited with constructing the first mill in the Philippine Islands, Robinson had been active as a mining engineer for many years. For the past several years he has been interested in property in the Piute Mountains, in the Mother Lode country, and in Nevada. Since July, 1936, he has been a partner of Mr. and Mrs. A. C. Wilkins in mining activities, and at the time of his death he was engaged in constructing a 50-ton flotation plant at the Gum Tree mine.

CALIFORNIA POTASH LANDS ARE OFFERED FOR LEASE

THE department of interior is offering for lease 6,840 acres of public lands in the Searles Lake district near Trona, California. The leases will be sold at auction at the general land office, Sacramento, California, on October 19. The successful bidders will be required to devote at least \$750,000 to the development and production of potash, expending \$50,000 for each of three of the six units to be offered for lease, and \$200,000 on each of the remaining three tracts.

The property offered for lease lies near the American Potash and Chemical Company plant at Trona, where 25 per cent of the domestic potash is understood to be produced. The leasing of the land was proposed to offset the curtailed importation of potash from Germany and other warring nations, according to Secretary Ickes. The auction will be conducted by Ellis Purlee, register of the district land office at the general land office in Sacramento.

BURM-BALL MINING COMPANY DEVELOPING IN NEVADA

THE Burm-Ball Mining Company is doing extensive development work at its Mountain View property near Gerlach, Nevada, employing a crew of 30 men. The 135-foot winze from the lower tunnel is being extended to 200 feet. All development activity at the mine is pointed toward mill installation. Pipe is being laid to bring water from Crutchet Spring, three miles away, and the water will be raised 1,000 feet. Plans also have been made for the building of a first-class camp. Work at Gerlach is under the superintendency of M. A. Heckey. John Burmeister, Box 306, Auburn, California, is company manager.

Operations in California may be abandoned by the company, which states that the restrictions imposed by the industrial accident legislation are a definitely discouraging factor to mining in that state.

CUT IN COPPER EXCISE TAX PROPOSED IN CHILEAN TREATY

THE continuance of the excise tax of 4 cents a pound on foreign-produced copper is threatened by the proposal to include that metal in the reciprocal tariff treaty with Chile now being negotiated, according to an announcement from Washington. The state department has announced that copper is one of the commodities on which a cut in the tariffs or excise taxes is under consideration.

Under the reciprocal tariff act, it is stated, cuts in tariffs and excise taxes can be made by the state department up to 50 per cent of the existing rate which means that copper could be cut to 2 cents per pound. No ratification of the treaty by Congress is necessary, a condition which is claimed by many to make the action unconstitutional. However, 19 such treaties are now in existence and, while copper has been considered for inclusion into several of them, action by interested groups has been successful in preventing a cut. The copper excise tax, which was renewed for a two-year period in June, 1939, has been in effect continuously since 1932.

It is pointed out by the Arizona Copper Tariff Board that the threat to the copper industry is not alone in the granting of a lower excise tax to the country with which the treaty is made, but that whatever cut is made in any of these agreements applies to all countries with which the United States has a "favored-nation" treaty.

At the present time the "favored-nation" list includes every important country in the world except Germany. A cut in the tax would permit copper to enter this country freely from Chile, Peru, Canada, South Africa, and other copper producing areas where the costs and wage standards are far out of line with those of the United States and where huge quantities of metal can be produced at very low cost.

The effect of the copper excise tax since it was enacted in 1932 has been solely to reserve the United States market to domestic producers without increasing the price to the consumer, this being necessary because of the development of huge copper resources in Africa and other countries during the "easy-money" period prior to 1929 which removed the dominance of U. S. production in the world market. Inasmuch as domestic copper, produced under American standards, could not compete, it became necessary for the U. S. producers to withdraw from the world market and be content with a limited United States market and operation at a fraction of capacity. A cut in the excise tax, it is stated, would remove even this safeguard.

MEXICO SEEKS DEPOSITS OF NITRATE AND SULPHUR

THE MINISTRY of national economy of Mexico is engaged in prospecting for deposits of nitrates and sulphur in the states of Jalisco, Colima, Durango, Zacatecas, Chihuahua, and San Luis Potosi. It is planned to exploit such deposits as are found in order to assure a constant source of these minerals for the government and industry.

VON BERNEWITZ DISCUSSES SAVING GOLD ON CORDUROY

RECOVERY or saving of gold and gold bearing minerals on corduroy is described in a report recently issued by the United States Bureau of Mines. The use of fibrous materials for catching gold at placers and in milling plants is an old practice which had been more or less discarded. Of late it has again come into extensive use.

The corduroy from which wearing apparel is made is unsuitable for saving gold, but a special weave with the threads or fibers cut is available for the purpose.

If gold does not amalgamate readily, or is associated with sulphides, or the ore is acidic making the mill water acid, corduroy will catch the valuable minerals, whereas mercury-coated copper plates will not do so.

The report, prepared under the direction of the bureau's metallurgical division, includes a description and pictures of corduroy, what it costs, how to use it, and how to treat the gold and heavy minerals caught thereon. The practice at a number of mines throughout the world, with small to large output, is explained, including a short description of each ore to make the information of more practical use.

A copy of Information Circular 7085, "Saving Gold by Means of Corduroy," by M. W. von Bernewitz, is available for free distribution, on request.

THE INTERNATIONAL SAFETY CONFERENCE IS POSTPONED

THE Fifth International Conference of Directors of Mine Safety Research, which was to be held at the Central Experiment Station of the U. S. Bureau of Mines, Pittsburgh, Pennsylvania, has been indefinitely postponed because of the war in Europe.

At the Fourth International Conference, held at Brussels, Belgium, in 1937, an invitation was accepted to hold the fifth conference at the testing station of Slezka-Ostrava in Czechoslovakia. However, because of unsettled conditions in Czechoslovakia early in 1939 the directors of European mines safety research stations accepted an invitation from Dr. John W. Finch, director of the United States Bureau of Mines, to hold the next conference in the United States.

Since most timely and valuable information has been compiled in papers intended for presentation at the conference, the bureau of mines may publish these papers before the conference is eventually held.

SILVER BULLION EXEMPTED FROM SALES TAX IN CALIFORNIA

SALES of silver bullion by a producer or refiner will be exempt from the California retail sales tax as a result of the signing of the Sawallisch bill by Governor Culbert L. Olson. The federal government will not pay the sales tax on silver, the governor said, and ore is often shipped to be refined in states which have no similar levy.

GEOPHYSICAL SURVEYS ANSWER SOME PROBLEMS

(Continued from Page 5)

ever, no significant deformation of the equipotential lines was found when they were traced. As before it was, therefore, concluded no conductive zone was present in the local area studied.

LINE electrodes were laid out running practically north-south across the top of the hill at a point about 300 feet west of the Cherokee shaft. These lines were about 220 feet long and some 280 feet apart and are marked AA-BB and CC-EE, respectively, on the detail map of the property. The question was: would a conductive zone be shown, between the wire lines, on the western portion of the lease giving information concerning conditions between the Cherokee shaft and the Annie Workings?

The configuration of the equipotential lines as traced in this fourth layout of line electrodes is given on the map with the title "Equipotential Line Survey." Two significant deformations of the equipotential lines here shown are of note as marked by xxx's. The smaller of the two, near the center of the map, suggests definitely that a conductive zone extends about 20 feet east from the cut indicated. This zone is defined particularly by the deformation at equipotential line No. 12, which swings out around the east end of the zone.

The second and larger conductive zone, marked "Electrical Indication" on this map, is shown by a marked deformation of the equipotential lines. These lines "bulge" away from the zone particularly around its ends, especially lines Nos. 6, 10, and 11. This deformation zone, or electrical indication, is about 60 feet long and is in a place where a conductive or mineralized zone might very reasonably be expected in relation to the main vein crossing the lease. It was recommended that this indication be explored by suitable mining operations.

AS PREVIOUSLY suggested definite answers to given questions cannot always be given as a result of geophysical surveys. It can be appreciated that by the method employed only conductive zones are indicated by the way in which they deform equipotential lines. Conductive zones are physical situations which by inference only can be called veins or ore bodies. The inference is well based in that sulphide minerals (except sphalerite) are very good conductors of electricity in comparison to the country rock of the area. It is equally true that wet zones in the ground are also good conductors, particularly if the water in them is acid as is often true in mines. Therefore, to be strictly honest, the survey actually located two physical features which, with a certain degree of validity, can be labeled ore bodies, veins, or extensions of veins. This situation is true of all geophysical surveys as they map physical anomalies only.

In view of the facts presented, however, the reader will be able to judge the validity and significance of the findings which have been previously summarized.

ENGLEBRIGHT HONORED BY

HYDRAULIC ASSOCIATION

CONGRESSMAN Harry L. Englebright of California was the honor guest at the third annual reception held by the California Hydraulic Mining Association at Nevada City, California. Englebright was presented with an honorary life membership card, engraved on a gold plate which had been fashioned from small contributions of gold made by a number of mining companies and individuals. More than 100 persons attended the reception.

In accepting the token of appreciation, Congressman Englebright traced the history of hydraulic mining from its chance inception in the early 50's, through its years of affluence and later vicissitudes, its complete prostration, and recent revival through legislation which he was instrumental in having enacted.

The meeting was presided over by President George W. Hallock, and Attorney Charles Gilmore of Sacramento acted as toastmaster.

NORTHUMBERLAND MINE READY

FOR 300-TON PRODUCTION

LATE IN October the H. M. H. Company expects to have the 300-ton cyanide plant at its Northumberland mine in the Northumberland mining district, Nye County, Nevada, completed and ready for operation. All of the mining and milling equipment has been moved from Weepah, where it had been used by the Weepah Nevada Mining Company which suspended operations early in 1939.

Officials of the Weepah Nevada concern are operating the new company. W. R. Brown of Tonopah, mine and mill superintendent of the Weepah Nevada company, is superintendent and chief engineer at the Northumberland property and J. C. Perkins, Tonopah, is manager. At present some 75 men are employed on construction and the company has built a boarding house and bunkhouses to accommodate them.

Open-pit mining methods will be used. Power will be obtained from a 675-horsepower Chicago Pneumatic Diesel plant which has been installed at the mine and is now ready for operation. Water is obtained from wells on the property and will be pumped approximately 2,000 feet to a 170,000-gallon storage tank. The metallurgy and design of the new plant were worked out by the Southwestern Engineering Company of Los Angeles, which company has furnished all the additional milling equipment required.

LABOR BOARD RULES AGAINST PHELPS DODGE CORPORATION

THE National Labor Relations Board has ordered the Phelps Dodge Corporation to dissolve the employes' representation plan in effect at its mine at Jerome, Arizona, and at its smelter at Clarkdale, Arizona. Both were declared by the board to be dominated and supported by the company.

The board also ordered the company to bargain with unions of the International Association of Machinists, International Brotherhood of Boilermakers, Iron Ship

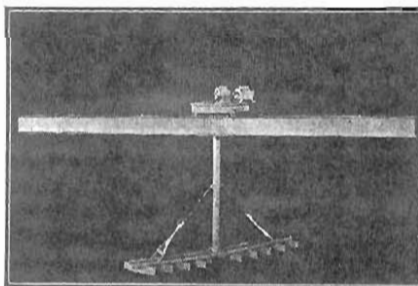
Builders and Helpers, International Brotherhood of Electrical Workers, and United Brotherhood of Carpenters and Joiners of America. All are affiliated with the American Federation of Labor.

BRITAIN PEGS PRICES OF COPPER, LEAD, AND ZINC

THE British Ministry of Supply has fixed maximum prices per long ton for copper, lead, and zinc and the prices, effective September 12, are listed below, together with their equivalents in cents per pound in U. S. money. The computation of the U. S. equivalents was made with sterling exchange at \$4.015 as quoted September 12.

	Price Fixed by British Ministry of Supply	U. S. Equivalent Cents per pound
Copper		
Electrolytic, unwrought, c.i.f.		
United Kingdom ports.....	£51 0s 0d	9.14
Billets, c.i.f. U. K. ports.....	£55 0s 0d	9.86
Cakes, c.i.f. U. K. ports.....	£51 12s 6d	9.25
Cathodes, c.i.f. U. K. ports.....	£50 10s 0d	9.05
Wire Rods, del'd.....	£55 0s 0d	9.86
Refined—unwrought in		
warehouse.....	£49 0s 0d	8.87
Rough—unwrought in		
warehouse.....	£46 0s 0d	8.24
Lead		
Empire—ex-ship.....	£17 0s 0d	3.05
ex-warehouse.....	£17 12s 6d	3.16
Soft pig, foreign		
ex-ship.....	£16 12s 6d	2.98
ex-warehouse.....	£17 5s 0d	3.09
Zinc		
Empire—ex-ship.....	£17 5s 0d	3.09
ex-warehouse.....	£17 17s 5d	3.20
Domestic, f.o.b. Swansea:		
Avonmouth.....	£17 5s 0d	3.09
High-grade, c.i.f. U. K. ports	£18 0s 0d	3.23
ex-warehouse.....	£18 12s 6d	3.34

No. 9: HARDINGE AGITATORS

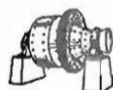


Hardinge Agitators are driven through completely enclosed mechanism running on ball bearings in oil. The raising winch is above the mechanism away from splash. The Agitator arms are extra heavy and submerged. Brace chains and cable are all rubber encased to insure long life.

HARDINGE

COMPANY, INCORPORATED - YORK, PENNSYLVANIA

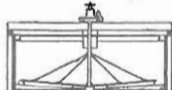
New York, 122 East 42nd Street Chicago, 205 West Wacker Drive San Francisco, 501 Howard Street Denver, 817 Seventeenth Street



CONICAL MILLS



COUNTER CURRENT CLASSIFIERS



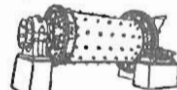
THICKENERS CLARIFIERS



RUGGLES-COLES DRYERS



CONSTANT WEIGHT FEEDERS



TUBE ROD AND BATCH MILLS

Measured AIR

means
FASTER
DRILLING
AT
LOWER COST



A THOR MACHINE FOR EVERY JOB

ROCK DRILLS

Made in several types and a wide range of sizes to meet varying requirements for sinking, drifting and stoping.



PAVING BREAKERS

Both valve and valveless types for light, medium or heavy duty demolition and street opening work.



CLAY DIGGERS— TRENCH DIGGERS

Light and heavy duty tools for digging gravel, clay and hardpan . . . for trench digging, shaft sinking and excavation where ground is frozen or unusually stiff.



COCHISE ROCK DRILL MFG. CO.

A Division of the

INDEPENDENT PNEUMATIC TOOL CO.

5200 EAST SLAUSON AVE., LOS ANGELES, CALIF.
NEW YORK CHICAGO SAN FRANCISCO

FLEXIPIPE

The improved flexible tubing for mine and tunnel ventilation

Saves time, labor, and money by improving air conditions and cutting tonnage cost.

Send for free sample and full information.

BEMIS BRO. BAG CO., ST. LOUIS, MO.

The Hazedel Mining Company, G. Clark Rhodehamel, president and general manager, Vicksburg, Arizona, has remodeled its mill located six miles south of Salome, Arizona, and has installed additional flotation cells and a Diesel power plant. Milling ore is hauled by truck from the Desert mine, which is operated under lease from Dr. C. D. Leshner of Vicksburg. A shipment of high-grade ore was sent to the smelter recently. Values are in gold, silver, and copper.



Alaska Juneau Gold Mining Company, P. R. Bradley, president, 1022 Crocker Building, San Francisco, California, has declared a dividend of 15 cents, payable November 1 to stock of record October 9. The company paid a similar amount August 1.

Seven men are employed on a two-shift basis in preparatory work at the property of the Relief Hill Mining Company, C. E. Clark, manager, North Bloomfield, California. A section of the outlet tunnel, which was worn away in past operations, is being graded up and a 350-foot flume is to be built over this strip to strengthen the site for continuous hydraulicking when the Narrows debris dam is completed.

Operators of the Emerson Gold Ridge mine near Victorville, California, are reported to have encountered the largest stope of high-grade ore ever found in the mine. The ore was encountered in unexplored ground and ranges in value from \$60 to \$300 per ton. The shoot has been penetrated for a distance of 30 feet and the vein as opened up is four to eight feet wide with a granite-diorite footwall and a granite hanging wall. The shoot was entered on the 325-foot level and at the 400-foot level the vein is eight feet wide. The vein matter consists of decomposed blue quartz in the oxidized zone and heavy sulphides on the lower levels. Operators of the property plan to continue development to the 1,000-foot level. The mine is being worked by O. D. Thomas, 924 South Catalina Street, Los Angeles, California, and associates. The mine is equipped with a cyanide plant, recently installed, which is treating tailings from previous operations.

Mining of chromium has been resumed at the Little Castle Creek mine in northern Shasta County, due to the war time increase in the price of the metal. During the World War the mine is said to have produced 15,000 tons of the metal. While the rich ore found at that time was worked out, lower grade deposits since have been found by L. H. Brown of Dunsmuir, California. Brown located the mine in 1906, sold it in 1915 to the California Chrome Company, and then bought it back after the war. He and his brother, M. M. Brown, also of Dunsmuir, are operating the property on a small scale.

A tunnel is being driven on an ore body said to range from 10 to 50 feet in width

at the property of the Sisson Gold Mining Company near Sierra City, California. The mine is equipped with a 25-ton pilot plant, water power facilities, and an auxiliary gas power unit. Captain J. P. Hodgson, vice-president and general manager, is directing work at the mine.

The San Andreas Dredging Company, Charles H. Thurman, president, 420 Market Street, San Francisco, California, has purchased the gold dredging equipment of Houston, Houston and Beever, operating on Coyote Creek near Angels Camp, California. The new owners will continue to operate the dredge at its present location and on other land under lease in various sections of Calaveras County. The San Andreas company recently moved one of its gold dredges from Calaveritas Creek near San Andreas to Dry Creek near Ione, where it is now in operation.

Work is nearing completion on a 10,000-foot gravity tram and a 2,500-foot jig back tram which is being built by Tungstar Corporation, Bishop, California, in order to convey ore at a lower cost to the treatment plant. The mill, which includes crushers, rolls, and five economy tables, has been completed, and operations are expected to begin by November 1. The mill is at an elevation of 7,500 feet and the mine is at the 12,000-foot elevation. Ore is reported to average 2.89 per cent tungsten oxide. The corporation is financed by Hollywood movie people and is headed by Reginald Owen. A. H. Heller, mining engineer, 945 Woodbury Road, Altadena, California, is vice-president and manager.

Dredging equipment which has been in operation at the Moccasin mine, Moccasin, California, is being moved to the Williams property in Plumas County. Malcolm L. Benoit, Crescent Mills, California, is superintendent. The dredge is owned by Harold Helling, 150 South Montgomery Street, San Jose, California.

The mine and mill of Cosumnes Mines, Inc., Grizzly Flat, California, are both on a two-shift basis, and a crew of 33 men is employed. Approximately 50 tons of ore are milled daily with an average recovery of 97½ per cent. The concentrates are said to run about 3 per cent. A secondary crusher has been purchased in order to grind the rock to a smaller mesh and thereby step up the capacity of the plant an additional 25 to 30 tons daily. The plant includes a ball mill, Dorr classifier, flotation cells, settling tank, and filter. The mine carries four approximately parallel veins, the Middle End, Bullard, Treat, and a vein as yet unnamed. The veins average about 2½ feet in width, extending, in some places, to a width of 15 feet. The entire group is worked by means of a tunnel. On the Middle End vein there are about 525 feet of backs and on the Treat vein, about 575 feet. Company officials include Ralph Penn, president; J. E. Masters, vice-president and manager; and Charles G. Ranney, secretary. Columbus Sciaroni is mill foreman and John Acuna is mine foreman.

A retaining dam and a 20-inch pipe line, 2,200 feet long, are being installed at the property of the Trinity Gold Mining Com-

pany, Charles R. Topping, president and general manager, Forest Glen, California, and additional pipe will be installed as washing progresses. Other improvements planned for the mine include the installation of two No. 3 giants and accessories, camp equipment, one bunk house, a cook house, and two cottages for officials of the company. A crew of six men is employed at present.

The 175-ton gravity concentration plant of the **Tungsten Corporation of California**, Bishop, California, is treating 150 tons of scheelite ore daily from the Black Rock mine, operated by the company. A crew of 49 men is employed at the property under the direction of J. T. McCord, general superintendent. Other operating officials include James E. Moore, mill superintendent; Enos S. Woods, master mechanic; and Charles Carnett, chief electrician. Power is furnished by a 200-horsepower Diesel engine. R. P. Johnson, 811 West Seventh Street, Los Angeles, California, is president and general manager of the company.

W. T. Woodworth, Campo Seco, California, who holds a lease on the **Fourth of July** mine located on Ragtown Hill near Campo Seco, has subleased the property to D. W. Butner, 555 Colusa Avenue, Berkeley, California. The mine is owned by Frank E. Pickard.

A 25-ton ball mill has been installed and placed in operation at the **Highland Lake** gold mine located 22 miles southwest of Castella, California, under the direction of

Al Miller, general manager, Castella. A crew of eight men is employed. The mine is owned by Philip Munko of Castella.

Recent development work at the property of **Briarcliffe Mines, Ltd.**, in the Nashville district about 12 miles from Plymouth, California, has resulted in sinking of the shaft to a depth of 150 feet, crosscutting for 160 feet, and 25 feet of north-south drift. Twelve men are employed under the direction of Mrs. R. O. Morrow, Box 156, Plymouth, who has been in charge at the mine since the death of her husband. The company is headed by G. B. Gordon, president, and J. D. Good, vice-president, Supertest Building, London, Ontario, Canada.

Robert A. Fordham, Tuolumne, California, and associates, operating the **Burns** mine on the Mono Highway above Camp Sunshine, are preparing to install a new pump at the property immediately. Installation of a small ball mill is contemplated as soon as sufficient ore has been blocked out to keep a 10-ton plant operating on a one-shift basis. Equipment has been moved recently to an old 30-foot shaft which has not been worked for 30

years, and preparations are being made for sinking an additional 100 feet, to be followed by some 200 feet of drifting and crosscutting. Values are in gold and silver.

The inclined shaft at the **Lost Cabin** mine near Alturas, California, has been unwatered and retimbered to a depth of 250 feet, and drifts running east at the 150, 200, and 250-foot levels are reported to be in ore. The vein averages five feet in width and the ore carries about \$10 a ton in gold with a small amount of silver. It is planned to ship a few carloads of ore to the smelter at Salt Lake City this fall, and in the spring the flotation mill at the mine will be placed in operation. The plant will handle about 15 tons daily. The mine is owned and operated by A. K. Wylie, Alturas. Work at the property is directed by F. B. Tyson, mine superintendent, Canby, Modoc County, California. Three men are employed.

A crew of 19 men is employed at the **Helen** quicksilver mine, Middletown, California, under the direction of M. North, general superintendent. The mine is equipped with a Gould rotary furnace. H. W. Gould, 10 Penthouse, Mills Building, San Francisco, is the operator of the property.

The 50-ton flotation-amalgamation mill at the **Plumas Eureka** mine of the **Eureka-Cunningham Mining Company**, a limited partnership, Johnsville, California, is treating about 35 tons of gold ore daily. The plant is operating on dump ore which aver-



TOUGHENED TO JUST THE RIGHT DEGREE

Without proper heat treatment the best steel ever made cannot possibly survive the ordeal of continuous ball mill service. To this end, every Alloy-Manganese steel casting is treated in the most modern furnace equipment by recording potentiometer pyrometer control. Next, it is suitably quenched to develop the exact degree of toughness and wear-resistance essential for maximum service. The modern facilities such as illustrated are your assurance of continuing superiority.



ALLOY STEEL & METALS CO.

1862 EAST 55th STREET
LOS ANGELES, CALIFORNIA

Manufacturers of PACIFIC JAW CRUSHERS Alloy-Manganese CRUSHER JAWS and MILL LINERS • HAND WINCHES • PACIFIC ROCK BIT GRINDERS • PACIFIC SLUSHING SCRAPERS and SHEAVE BLOCKS • WEARING PARTS for Mining and Contracting Machinery

INSIST ON

ALLOY-MANGANESE
STEEL

MILL LINERS

ages from \$6 to \$40 a ton. The main tunnel is being opened up to the 5,000-foot station and work is now in more than 700 feet. A hydroelectric plant with an R. E. A. standby was installed recently, and installation of a new mill is planned in the spring. A crew of 10 men is employed under the direction of R. W. Cunningham, general partner, Blairsden, California.

Charles S. Hutson, 916 North Edgemont Avenue, Los Angeles, California, is engaged in running a drift to tap the gravel channel at the El Dorado mine located four miles from Pacific, California. The drift is in more than 125 feet and it is estimated that it will be necessary to extend it another 200 feet in order to reach the objective. Isham and Isham, 230 Redwood Avenue, North Sacramento, California, recently completed a geophysical survey of the property. A compressor has been installed and necessary buildings erected at the mine. A crew of six men is employed. Hutson is directing work at the mine. R. D. Gardner, 2710 Marshall Way, Sacramento, California, is consulting engineer.

The Atlas Gold Dredging Corporation, H. J. Ackley, mine superintendent, 102 Brockington Court, Grass Valley, California, is engaged in testing gravel channels in the Steep Hollow district. Water from Steep Hollow Creek is available for working the ground. Frank E. Ford, 601 West Fifth Street, Los Angeles, California, is president of the corporation.

The winze at the Spring Hill mine near Grass Valley, California, is being sunk to

greater depth, and a station is being cut on the 1,700-foot level in the inclined shaft. The 100-ton milling plant has been operating as a custom mill, treating ore from the Union, California, Mack, and Giant King mines. C. C. Cushwa is manager at the mine. Stewart M. Marshall, 1915 Mills Tower, San Francisco, is general manager.

A series of test holes is being dug in the old Johannesburg Wash, centering around the Black Cloud claims near Randsburg, California, by the California Gold Dredging Company, W. H. Watters, superintendent, 3632 McKinley Boulevard, Sacramento, California. The purpose of the investigation is to determine the values and also to ascertain the width of the channel flow, which is known to be 12 feet thick and at a depth of from 60 to 70 feet.

Augustus J. Klamt, Virginia City, Nevada, and A. Montgomery recently had a crew of four men engaged in prospecting and developing at the Laughlin and other properties in the Masonic district near Bridgeport, California.

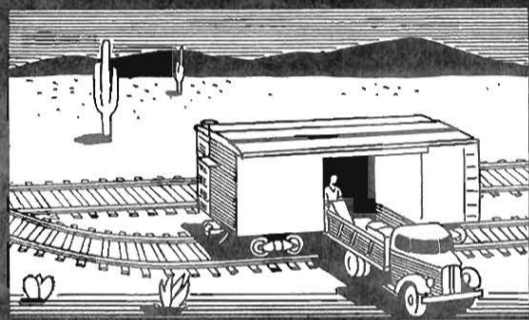
The Vulcan Mercury Company, George T. Hall, manager, is preparing to install additional equipment at its property located in the vicinity of Gibraltar dam near Santa Barbara, California. It is understood that all litigation involving the company's holdings has been amicably disposed of.

The California Engels Mining Company, A. J. Heller, president, 350 California Street, San Francisco, California, has filed a registration statement with the SEC

covering 923,284 shares of capital stock. Proceeds of the issue will be used to place two mining properties in operation and to furnish working capital for the company. The stock will be offered publicly at 25 cents a share. Estimates of the company's engineers show that a total of \$130,697 will be required to complete the equipment and supply working capital for the Groom mine at Wickenburg, Arizona, of which \$79,400 is necessary immediately. Another \$36,000 is required to cover a \$21,000 payment on the purchase price of the New Fennis mine at Caliente, California, and to install equipment and supply working capital to the mine. The company's Engels property in California has been leased to Lord and Bishop, Sacramento, California, gold dredge operators, for a period of 90 days, and test drilling is now in progress. Preliminary tests have indicated an average value of 25 cents a yard on the area being surveyed, although final figures have not yet been determined.

The Pilot Dredging Company, owned and operated by George and Charles M. England, is treating gravels of the You Bet mine at Greenhorn Creek near Nevada City, California. A small dredge is being used. The H. F. England Company is installing a three-cubic yard dredge on the property also. An estimated 20,000,000 yards of gravel are available.

The Atolia Mining Company, L. E. Putnam, superintendent, Atolia, California, is engaged in doubling the capacity of its flotation plant and the new portion of the



LOWER FREIGHT COST

Cyanamid maintains stocks of cyanidation and flotation reagents at Azusa, California and El Paso, Texas. You get prompt delivery at lowest transportation cost by taking advantage of the lower freight rates on combination shipments covering your complete needs for metallurgical chemicals.

Write for descriptive stock list and quotations



AMERICAN CYANAMID & CHEMICAL CORP.
AZUSA, CALIFORNIA • EL PASO, TEXAS

WORTHINGTON



EQUIPMENT FOR MINING

STATIONARY AIR COMPRESSORS	DIESEL ENGINES
MINE CAR AIR COMPRESSORS	GAS ENGINES
PORTABLE AIR COMPRESSORS	STEAM TURBINES
CENTRIFUGAL PUMPS	V-BELT DRIVES
ROTARY PUMPS	REDUCING AND INCREASING GEARS
POWER PUMPS	
STEAM PUMPS	
BORE HOLE PUMPS	
DEWATERING PUMPS	
DRAINAGE PUMPS	
COFFERDAM PUMPS	
STATION PUMPS	
SINKING PUMPS	
GATHERING PUMPS	
ROCK HAMMERS	
SELF-FEEDING DRIFTERS	
SCREW-FEEDING DRIFTERS	
WAGON DRILLS	
BLOCK HOLERS	
SELF-ROTATING STOPERS	
HAND-ROTATING STOPERS	
SHAFT SINKERS	
ROCK DRILL ACCESSORIES	
FORGING FURNACES FOR DRILL STEEL	
AUTOMATIC HEAT TREATING MACHINES FOR DRILL STEEL	

• **Correct engineering**
• **High grade materials**
• **Careful workmanship**

● **Send for literature**

Offices and Dealers in Principal Cities

CD8-10B

WORTHINGTON PUMP AND MACHINERY CORPORATION
General Offices: HARRISON, NEW JERSEY

mill is expected to be ready for operation soon. The company continues the treatment of tailings and a crew of 21 men is employed in the mill. At the No. 3 mine, 13 men are employed and, in addition, about 10 men are working on a lease basis. Tom E. Burke is mill foreman.

Irven Crenshaw of Palmdale, California, has acquired a one-third interest in an antimony property near Frazier Mountain. He is associated with Charles B. Fife and Charles Cuddy, both of Frazier Park. A four-foot ledge is reported to have been opened up.

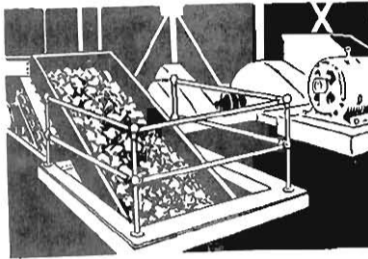
W. E. Grant and Charles Bryan, operating under lease the Mildred Lloyd mine near Columbia, California, are making shipments of ore to the Selby smelter, from which very satisfactory returns are being obtained.

The 225-foot level of the Alhambra-Shumway mine, Kelsey, California, is reported to have yielded in excess of \$100,000. The mine and 25-ton ball mill are operating on a three-shift basis and development and exploration work are also in progress. A jig is used to recover the free gold and heavier concentrates. High-grade material is worked in an amalgam barrel or is shipped to the smelter without treatment. A pumping plant has been installed at Traverse Creek and a 2,500-foot pipe line laid. A two-mile spur line brings power to the property. Ray M. Henrickson is superintendent.

Properties of the Lodestar Mining Company, John M. Rogers, general manager,

Mojave, California, are producing approximately 175 tons of gold and silver ore daily, and a crew of 50 men is employed. The ore is milled at the plant of the Golden Queen Mining Company, under an agreement made with that company. Operating officials at the Lodestar include W. M. Benham, general superintendent; S. E. Blamey, chief mine engineer; N. N. Corley, chief electrician and master mechanic; G. H. Scibird, chief chemist; L. J. Killian, mine foreman; and H. L. Boyd, purchasing agent.

Testing has been completed and work is nearing completion on installation of another shovel and trommel at the Outland gold placer mine in the Butte Creek district 15 miles northeast of Chico, California. The new equipment is expected to be in operation early in October. The mine is being worked on a partnership basis and those associated in the project are R. T. Davis, Jr., Tacoma, Washington; Dr. Harry Feagles, Chehalis, Washington; and F. C. Outland, Box 436, Chico. The latter is directing work at the mine. Five men are employed.



The 100-ton flotation plant at the Pali-sades mine, Calistoga, California, is operating at capacity on gold and silver ore. A crew of approximately 60 men is employed. Francis A. Baby is mine foreman and purchasing agent; John Palecek is mill superintendent; and Floyd Strahan is chief electrician. The mine is operated under lease by the Graham-Loftus Oil Corporation, 811 West Seventh Street, Los Angeles, California.

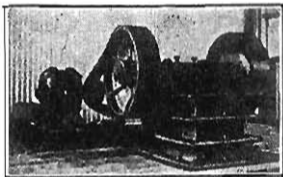
The Oat Hill mine, Middletown, California, which has been worked under lease for the past three years, is again being operated by the Oat Hill Mine, Inc., H. W. Gould, general manager, Mills Building, San Francisco. A crew of 22 men is employed under the direction of R. J. McEwen, general superintendent, and the mine is producing 65 tons of quicksilver ore daily. The property is equipped with a 60-ton Gould rotary furnace. V. Yraza-bal is mine foreman and L. H. Wood is plant foreman.

Work planned for the Pestle group during the fall and winter season includes extension of the shaft to a depth of 150 feet, a crosscut to the mineralized zone, and drifts on the shoot. It is also planned to sink a 50-foot shaft on an outcropping of antimony on the White Cloud claim. S. M. Mingus, 10931 Bloomfield, North Hollywood, California, is the owner of the group.

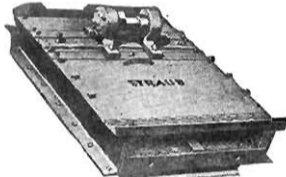
Installation of a 5,000-cubic yard Bodinson dredge and a three-cubic yard Marion dragline is planned by the Trebor Corporation, R. D. Mueller, president and general

NOT JUST RIB-CONE MILLS—

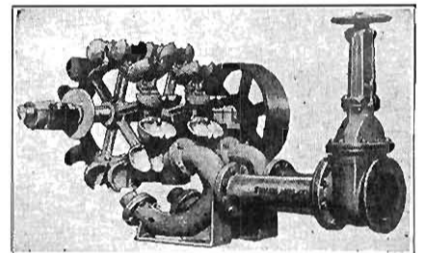
BUT A COMPLETE LINE!



The extra amount of "fines" produced by these husky all-steel crushers assures increased mill capacity. Sectionalized for difficult transportation.



Straub's simple and practical head motion used on these vibrating screens gives close sizing and economical operation. Single or multiple decks.



Where water is available, we build water wheels to suit your requirements. When writing, please state power required, quantity of water available, and vertical head in feet.



We make Overstrom Universal Concentrating Tables in many sizes. Without question, the most simple and practical table ever made.

We also furnish ore feeders, mercury feeders, screw-type classifiers, screen wheel classifiers, mine cars, amalgamation barrels, jigs, flotation cells, etc. Our ore testing laboratory can furnish prompt and accurate flowsheets.



Straub all-steel water tube boilers give economical power. Sectionalized when necessary.



For ores suitable for smelting, we build the Mace smelting furnace



The Straub stamp mill is ideal for coarse gold and inside amalgamation. Sectionalized for muleback where needed.

STRAUB MFG. CO.

505 Chestnut St.,

Oakland, California

SEND FOR OUR NEW BULLETIN NO. 302

SOUTHWESTERN'S ORE TESTING REPORTS ARE DEPENDABLE

Ore tests conducted by Southwestern, including every process of amalgamation, gravity concentration, flotation, cyanidation and leaching, are personally supervised by experienced engineers and metallurgists to assure positive accuracy. With utmost confidence you can depend on their details of treatment, recommended process and flow sheet. It will pay you to use this organization with more than 24 years of service to the mining industry.

Consult

SOUTHWESTERN ENGINEERING CO.

4800 Santa Fe Avenue
Los Angeles, California

For . . .

- ENGINEERS
- STUDENTS
- OWNERS

The Examination of Placer Deposits

By THOMAS A. GRAVES

168 pages, illustrated, \$3.00

Here is a wealth of information on the occurrence, examination, and exploitation of placer deposits in a handy little book that can be conveniently tucked away and carried in the field. It covers such subjects as: classification and formation of alluvial deposits, concentrates and their significance, gold, age of placers, distribution of placers, placer exploitation—equipment and methods, placer examinations, economic considerations, and sampling methods and equipment. Valuable tables are also included.

THE MINING JOURNAL
PHOENIX ARIZONA

A PLUS IN LUBRICATION?

Yes, it's Shell's "Invisible Element" . . . a combination of Shell's world-wide resources in laboratories and refineries; decades of experience and research by Shell's engineers and scientists. It is the aim to make lubrication more efficient; more economical for industry.



SHELL INDUSTRIAL LUBRICANTS

manager, Mariposa, California. The new boat will be located on the Crocker-Huffman Company land and will be used to treat gravel along Burns Creek in Merced and Mariposa counties. Diesel power will be used. The dredge will be equipped with two stackers in order to permit a better tailings disposal. The corporation is at present operating a 2,000-cubic yard Bodinson dredge which is handling 2,000 cubic yards of gravel in 24 hours.

A crew of 17 to 20 men is employed in gold dredging operations near Weaverville, California, by the Viking Dredging Company, J. C. Hamilton, general manager, Chico, California. A. B. Ogilvie is general superintendent at Weaverville.

Drifting on the vein continues at the Gold Bluff mine, Downieville, California, with a view to exploring the area north of the former workings. The drift has been run more than 565 feet up to the present time. The mine is under option to Carlo S. Morbio, 731 Call Building, San Francisco, California, and associates. George R. Costa, Downieville, is mine superintendent.

A crew of about 20 men is employed at the property of the Mirabel Quicksilver Company, Thomas L. O'Connor, superintendent, Middletown, California. Production is coming from both the Great Eastern and the Bradford mines, located about 1,000 feet apart. Ore from both properties is roasted in the 25-ton Gould rotary furnace at the Great Eastern. Operating officials include W. F. Hoppe, mine foreman; P. M. Hyde, bookkeeper and assayer; and J. E. Wolfe, furnace foreman. The company is headed by W. E. Best, president and general manager, Middletown.

Active operations are to be resumed the latter part of October at the property of the Genter Gold Mining Company, Alleghany, California. It is planned to work one shift and the proposed development program calls for a crosscut to the serpentine, approximately 200 feet, thence northerly along the contact in order to tap three known ledges. Track, air and water pipe have been laid to the working face, and the property has been fitted with a 500-foot, two-stage Sullivan compressor, a 140-foot Rix compressor, complete drilling equipment, and miscellaneous small tools. Buildings include a fireproof shop, compressor house, powder magazine, and a small wooden compressor building. A road has been built to the mine from the county highway also. The company is headed by James G. Pierce, president and general manager, National Hotel, Nevada City, California. Carl G. Genter, who also makes his headquarters at the National Hotel, is assistant general manager and purchasing agent.

The Jasper-Stacy Company, 216 Pine Street, San Francisco, California, is employing 22 men in dragline dredge operations near Lincoln, California. The recovery plant is equipped with riffles, jigs, a small ball mill, and amalgamation plates. Work is directed by N. T. Stacy, general superintendent, Lincoln. J. G. Parker is assistant superintendent.

The 100-ton cyanide plant of the Holmes and Nicholson Mining and Milling Com-

pany, Box 451, Winterhaven, California, is treating from 75 to 80 tons of gold-silver ore daily from the company's Padre and Madre mines. From 30 to 35 men are employed in the mines and the mill crew totals nine men. K. A. Holmes is president and general manager with headquarters at Winterhaven. Operating officials include Thomas J. Thorne, mine superintendent; Harvey Hardy, mill superintendent; John Frazer, assistant mill superintendent; and J. G. Hardy, chief chemist.

Machinery is being installed at the Tanner gold mine near Murphys, California, preparatory to active operation by the Comstock Gold Point Mines Company, Charles M. Richardson, president and general superintendent, Currant, Nevada. A crew of 15 men is employed at the mine at present. John N. Richardson, 418 Richfield Building, Oakland, California, is general manager and purchasing agent for the company. The company also owns four claims in the Currant Creek district near Currant, Nevada. Phil Malloy is master mechanic and George Parker is chief electrician, both with headquarters at Currant.

Mines of the Idaho Maryland Mines Corporation, Albert Crase, general manager, Grass Valley, California, operating on a 25-day month, are producing 1,500 tons of ore daily, carrying principal values in gold with a small amount of silver. The 1,400-ton milling plant, which is equipped for flotation, amalgamation, and cyanide leaching, is treating 1,250 tons daily on a 30-day basis. A new dry house and a new blacksmith shop have been completed and during August 3,907 feet of development were done. A crew of 811 men is employed. H. M. Wolflin, assistant general manager; J. F. Cowley, superintendent of the New Brunswick mine; R. H. Wright, mill superintendent; and H. C. Clifford, refinery superintendent, make their headquarters at Grass Valley. F. W. Denton, Jr., superintendent of the Idaho mine, and Rollin Farmin, chief mine engineer and geologist, are located at Nevada City, California. Other operating officials, all stationed at Grass Valley, include: E. J. Berryman, master mechanic; L. S. Stevens, chief electrician; N. S. Wagner, chief chemist; T. J. Campbell, purchasing agent; J. T. McCarthy, chief clerk; T. J. Barrett, employment agent; T. J. Hall, construction and trucking foreman; H. E. Viets and C. Fitch, safety engineers; Ivan Jacoby and Fred S. Pinch, mine foremen. The corporation is headed by E. L. Oliver, Balfour Building, San Francisco. Errol MacBoyle of Grass Valley and San Francisco is executive vice-president in charge.

The Central Eureka Mining Company, C. C. Prior, president, 111 Sutter Street, San Francisco, California, has declared a dividend of 6 cents a share on capital stock, payable October 14 to stock of record September 30. The October payment will make a total of 32 cents a share paid by the company so far this year. A total of 40 cents a share was paid in 1938. The company operates at Sutter Creek, California.

The 300-ton amalgamation plant of the King Solomon Mines Company, W. C. Baldwin, vice-president and general manager, Black Bear, California, is operating at ca-

capacity on gold ore from the company's mine, and a crew of 39 men is employed. A Diesel electric plant furnishes 275 horsepower for operations at the property. Operating officials include A. B. Woodward, mine superintendent; Harry Ward, mill superintendent; Jack Turk, mechanical engineer; Elmer Eiselstein, safety inspector; and John Morse, chief clerk.

The **Big Canyon** dredge, George F. King, general manager, Shingle, California, is handling approximately 4,000 yards of gravel in 24 hours in operations near Shingle, with a crew of 15 men employed. Operators of the dredge are also testing new gravel deposits with a view to acquiring additional ground.

A small crew is engaged in developing ore for future milling at the Experimental mine of the **Shoe String Mining Company** near Columbia, California. The mine is equipped with a five-stamp mill, amalgamating machinery, and a concentrating table. F. J. Schoettgen, Box 178, Columbia, is president of the company.

The **Fortuna** mine above Phoenix Lake is being operated by John D. Garaventa, Sonora, California, and associates. The mine has been on a production basis for the past several months and returns are said to be satisfactory.

At a special meeting of the board of directors of the **Operator Consolidated Mines Company** held September 3, 1939, an assessment of one-half cent a share was levied on the outstanding stock. Proceeds will be used for new development work along with present operations. The management reports that approximately 6,000 to 8,000 tons of ore are developed. At the end of August a shipment of 100 ounces of bullion was made to the mint, returns from which are expected to total about \$2,500. The company operates property at Johannesburg, California, under the direction of Harold G. Hunt, Randsburg, California, secretary and manager. G. Basil Blonsky, Randsburg, is engineer in charge of mine and mill.

E. F. Schultz, Markleeville, California, and H. E. Brunson, Goose Creek, Texas, theatrical and business men, are engaged in developing the **Chambers** property located in the Mount Tallac district six miles west of Lake Tahoe. Trenching and surface prospecting are said to have disclosed a mineral zone 600 feet wide and 1,000 feet long with free milling and sulphide ore in evidence. Assays of the main deposit are understood to vary from \$3 to \$6 per ton, with high-grade showing in the seams. Six claims have been located by the two men. Comprehensive exploration of the ore body by means of a diamond drilling program, or by tunneling, is under consideration.

The 2,700-foot tunnel driven from the Pine Tree mine, Bear Valley, California, has tapped the Josephine shaft at the 300-foot level. The shaft is being cleaned out and sampling of the large ore bodies on that level is under way. Should the sampling work prove to be satisfactory, it is expected that it will mean more extensive operations at the Pine Tree mill, which is at present treating from 150 to 160 tons daily. The Josephine shaft has been closed

since the early 1900's when it was last worked by the Mariposa Commercial and Mining Company. The Pine Tree and Josephine are operated by the **Pacific Mining Company**, Philip R. Bradley, Jr., manager, Bear Valley. C. K. Dennis is superintendent.

Work is nearing completion on a new custom mill which is being built on the Box S Ranch near Lucerne Valley, California, by the **Allied Process, Ltd.**, E. W. Myers, principal owner, Newark, New York. The company is opening a mine 14 miles north of the Box S and bunk houses are being built to accommodate a permanent crew of 20 men.

William Parry is operating a gas-electric, three-quarter yard shovel on the Leslie

Frey property located on the Middle Fork of the Cosumnes River, four miles east of Fairplay, California. Parry, who holds the lease on the 160-acre property, estimates that there is one mile of channel available, which will require from three to five years to work. The shovel lifts the material to a grizzly located 18 feet above the ground, the smaller material passing through to a gold saver designed by Parry. Sluice boxes are also used. Installation of a hydraulic elevator is planned for the unit. Former operators of the property constructed a half-mile diversion canal, which permits working in the river bed.

The old **Cherokee** drift mine located 12 miles north of Oroville, California, has been sold to Walter E. Dorn, attorney,

Greater illumination . . .

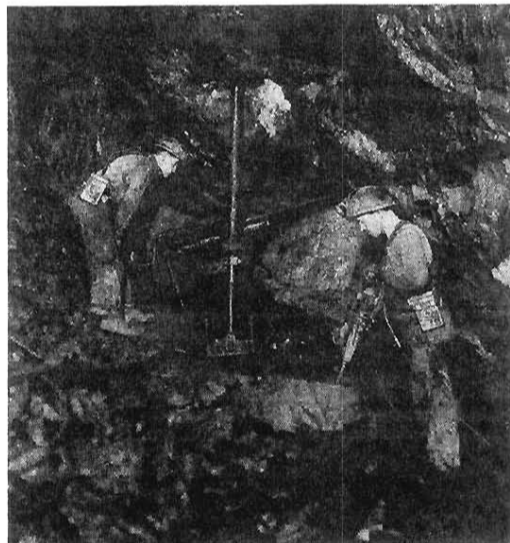
better directed to the job . . PLUS

finer, safer head protection! . . .

EDISON ELECTRIC CAP LAMPS · M·S·A·SKULLGARDS

Who does the better, safer job . . . the miner working with an unprotected head, in inadequate light . . . or the miner secure in his M.S.A. Skullgard, using the flood of brilliant light, aimed directly at his work, produced by his Edison Electric Cap Lamp!

The facts speak for themselves. The savings this safety team achieve in production and compensation costs are on record in scores of mines . . . with comfort and convenience approved by more than 400,000 coal and metal miners throughout the world! Let us give you the details—better still, arrange an actual demonstration in your own operations—and tell you of our easy Edison Lamp rental plan of purchase.



MINE SAFETY APPLIANCES COMPANY

Braddock, Thomas & Meade Sts., Pittsburgh, Pa.
District Representatives in Principal Cities

M. S. A. Products include Breathing Apparatus . . .
Inhalators . . . Comfo Respirators . . . Masks of all Types
. . . Gas Indicators . . . Gas Detectors . . . Safety Goggles
Protective Hats and Caps . . . Edison Electric Cap Lamps
Safety Belts . . . Safety Clothing . . . First Aid Equipment.
Descriptive Bulletins will be sent on request.

Hearst Building, San Francisco, California, as trustee for interested parties, for a price of \$132,000. The mine was sold by the Vinton estate.

Carson Hill Gold Mining Corporation, 206 Sansome Street, San Francisco, California, has declared a dividend of 1 cent a share on capital stock, payable September 30 to stock of record September 20. This payment brings to 5½ cents a share the total disbursements in the fiscal year ended September 30. In the fiscal year ended September 30, 1938, the company paid 2 cents. Mining properties are located at Melones, California. John A. Burgess is general manager at the mine.

The **Gold Lake** mine, formerly known as the old Willoughby, located in the Gold Lake district near Blairsden, California, is under lease and option to Seattle interests. A 1,700-pound test shipment of ore sent to Seattle for sampling is reported to have returned \$59, \$10 of which was in free gold and the remainder in concentrates. Ralph O. Clippinger of 7024 Twentieth Avenue Northwest, Seattle, Washington, is superintendent at the mine, and a crew of eight men is employed. A 20-ton mill is being shipped from Seattle and it is planned to work the property through the winter. It is understood that power facilities are now in order and ready to go. Samuel T. Hart, 4100 West Alaska, Seattle, Washington, is president, and Amos Slater, Pioneer Building, Seattle, is consulting engineer.

A strong vein of gold ore is reported to have been encountered on the 1,000-foot level of the **Black Oak** mine at Garden Valley, California, owned and operated by Russell J. Wilson. A crew of 20 men is employed and the 25-ton flotation mill is treating 20 tons of gold ore daily. The William Poor property in the Kelsey district was taken over by Wilson recently, and ore from that mine is to be hauled to the Black Oak mill. Wilson also operates the Spanish Oak mine. James Franklin is mill superintendent.

Heavy equipment is being installed for more extensive operations at the property of the **Mesquite Mining and Milling Company** 45 miles north of Yuma, Arizona. A shaft has been sunk to a depth of more than 200 feet where commercial gravel is said to have been encountered. Claude R. Zappone is president of the company.

Work is under way on construction of a 40-ton mill at the gold claims of Thomas Y. Brent in Long Valley near Campo, California. Six men are employed.

Work has been completed on the installation of a 30 to 35-ton amalgamation-concentration plant at the **Spangler** mine located about 12 miles northeast of Randsburg, California. The mill, which was formerly used at the Windy mine near Randsburg, includes a Forrester-Rexman rod mill, amalgamation plates, a Deister concentrating table, and a Joshua Hendy amalgamation bowl. A recovery of 96½ per cent is reported to have been made with the new plant. At a later day a cyanide plant may be installed for treatment of tailings. It is also planned to develop water on the property. At present all water is hauled to the mill. The Spangler was taken over recently by a group which includes W. H. Nicholson and O. A. Taber, both of Taft, California. J. M. Quigley is directing work at the mine.

The property of the **Mother Lode Gold Mines Company**, Drytown, California, is being unwatered under the direction of L. S. Wincapaw, consulting engineer, National Hotel, Jackson, California. The mine is now controlled by Salinas, California, interests, headed by H. E. Rowe, president. Upon completion of the present work, the mine will be examined to determine future operations. Six men are employed under the direction of Joe Foster, superintendent, Station A, Auburn, California.

A 1,400-acre tract of land along French Creek northeast of Berry Creek, California, is being worked by means of a dragline dredge under the direction of W. R. Clark, Box 646, Oroville, California. The ground is leased from the Pacific Gas and Electric Company and it is estimated that five years will be required to complete the work. Fifteen men are employed. Equipment includes a 1½-yard Northwest dragline, two 1½-yard Esco dragline buckets, one Diesel Caterpillar tractor, one gasoline Caterpillar tractor, and a Bodinson dredge. A new townsite has been built up, including a school and water system. All employees live at the property.

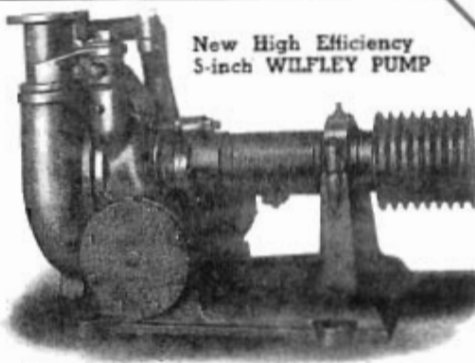
James R. Wood, Box 385, Hayfork, California, is carrying on hydraulicking operations at the **Rocky Point** placer mine located on Big Creek. The gravel, which averages about 75 cents a yard, is said to carry large nuggets. An all-year supply of water is available for the mine.

Work is progressing on the new 150-ton all-steel flotation plant, steel change room, hoist house, machine shop, and blacksmith shop at the **Cherokee** mine, Greenville, California. Mining operations are continuing during the construction period, and the present 80-ton plant is operating at capacity on gold ore. A crew of 55 men is employed under the direction of Frank Humphrey, general manager, Box 215, Greenville. L. G. Cox is mill superintendent and Loyd Joseph is mine foreman. The property is owned by Alfred L. Merritt, 40 Fifth Avenue, New York City, and 200 Bush Street, San Francisco.

Tailings at the **Vanderbilt** mine near Ivanpah, California, are being cyanided on a small scale by W. A. Young, lessee, and some work is also being done in the mine. Erection of a small mill is considered as a future possibility.

AVERAGE PRICES OF METALS
(Figures by American Metal Market)

	Copper Per Lb. Conn. Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	13.024	8.097	5.344	66.781
1925	14.042	8.020	7.622	69.066
1926	13.796	8.417	7.337	62.197
1927	12.920	6.766	6.242	56.370
1928	14.670	6.806	6.027	58.174
1929	18.107	6.833	6.512	52.993
1930	12.982	5.517	4.566	38.154
1931	8.369	4.244	3.698	28.701
1932	5.792	3.181	2.881	27.892
1933	7.270	3.870	4.081	34.728
1934	8.658	3.8595	4.162	47.978
1935	8.830	4.0648	4.531	64.273
1936	9.710	4.7091	4.903	45.088
1937	13.891	6.0086	6.517	44.806
1938	10.225	4.7888	4.618	43.222
1939				
Jan.	10.425	4.870	5.00	44.714
Feb.	10.00	4.6218	4.816	44.75
Mar.	10.00	4.50	4.418	44.446
Apr.	10.00	4.50	4.185	42.75
May	9.60	4.40	4.043	42.75
June	9.00	4.1481	4.148	42.75
July	9.810	4.882	4.75	42.75
Aug.	10.125	4.90	4.75	42.75
Sept.	10.255	5.00	4.855	42.75
Oct.	10.981	5.10	5.015	42.75
Nov.	11.25	5.0913	4.913	42.75
Dec.	11.25	4.8423	4.60	42.75
Ave. 1938	10.225	4.7888	4.618	43.222
1939				
Jan.	11.25	4.826	4.674	42.75
Feb.	11.25	4.8045	4.50	42.75
Mar.	11.25	4.8241	4.50	42.75
Apr.	10.469	4.782	4.60	42.75
May	10.058	4.75	4.50	42.75
June	10.00	4.80	4.50	41.955
July	10.220	4.854	4.517	34.944
Aug.	10.491	5.0426	4.724	35.951
Sept.	11.930	6.464	6.150	36.956



New High Efficiency
5-inch WILFLEY PUMP

A. R. WILFLEY & SONS, Inc.
DENVER, COLORADO
New York Office: 1775 Broadway, New York, N. Y.

More Efficiency
means **Lower Costs**

A completely new standard of EFFICIENCY is created by the new 5-inch WILFLEY pump illustrated at left. Like ALL Wilfleys, this pump will deliver a highly efficient, continuous performance, 24 hours a day without attention. It eliminates costly delays caused by shutdowns. It's the pump to buy if you want to reduce COSTS. Write for complete details.

WILFLEY
centrifugal SAND PUMPS

REPEAT ORDERS FROM SATISFIED CUSTOMERS !!

ON PREVIOUS WKE DESIGNED AND CONSTRUCTED MILLS



Standard Cyaniding Co., plant—Lovelock, Nev., July 31st, 1939

Look at these recent installations—proof of user satisfaction with jobs we've done previously.

500 Ton sand-slime cyanide plant, crushing section in background. Steel frame, two 36' leaching vats erected.

Save yourself time and excessive expense. We will do your complete installation, from blueprint to finished plant.

300 Ton sand-slime cyanide plant, 4-28' sand vats erected, sub-structure and grading being completed.

Repeat



Willow Creek Mines, Inc., plant—Redding, Calif., August 10th, 1939.

Repeat

Let Us Engineer Your Job

WESTERN KNAPP ENGINEERING CO.

CONSTRUCTION ENGINEERS—COMPLETE MINE AND MILL INSTALLATIONS

760 Folsom St.
SAN FRANCISCO, CALIF.
1649 Blake St.
DENVER, COLO.

3649 Santa Fe Ave.
LOS ANGELES, CALIF.
1025 So. Central Ave.
PHOENIX, ARIZONA

210 S.W. Temple St.
SALT LAKE CITY, UTAH
508 W. First Ave.
SPOKANE, WASH.

500 N. 16th St.
SACRAMENTO, CALIF.
2927 Louisville Street
EL PASO, TEXAS

**MICHAEL CURLEY WILL RETIRE,
C. R. KUZELL TO SUCCEED HIM**

MICHAEL CURLEY has announced that he will retire on December 31, 1939, as manager of the New Cornelia Branch, Phelps Dodge Corporation, Ajo, Arizona. He has been associated with the Ajo property since 1913, serving first as superintendent under the late General John C. Greenway.

Before moving to Arizona in 1913, Curley was assistant to General Greenway in mining activities at Colraine, Minnesota. Diamond drilling and test holes convinced the pair that rich copper ore was to be found at Ajo and the results of their planning are the huge open pit and recovery plant now there.

Upon the death of General Greenway in 1925, Curley became general manager and he continued in the position of manager when the property was taken over later by the Phelps Dodge Corporation. He was instrumental in working out plans for development of the town of Ajo as the camp grew and, as a result, it has become a model mining community.

Curley also sponsored a number of community enterprises and was actively interested in social work. When employment dropped with the decline of copper prices during the depression, welfare organizations came under his supervision, and when emergency aid was organized in Arizona, Curley was a member of the first state board to administer assistance. He also was a member of the first Pima County Welfare Board.

Charles R. Kuzell, at present smelter superintendent of the United Verde Branch at Jerome, Arizona, has been named to succeed Curley at Ajo. He has been associated with the Jerome property since 1918. Prior to that he had been connected with the Anaconda Copper Mining Company at Great Falls and Anaconda, Montana, for eight years, rising through various positions to that of smelter superintendent before moving to Arizona.

He is a graduate of the Case School of Applied Science, receiving his degree of B. S. in mining in 1910, and that of metallurgical engineer in 1914. Kuzell has been granted patents on his designs for an improved reverberatory furnace, and improved arrangement of reverberatory furnaces and waste heat boilers.

**NEW CUSTOM ANTIMONY PLANT
NEAR MOJAVE, CALIFORNIA**

A 150-TON daily capacity custom antimony concentrator has been completed by the S. T. M. Mines in Pine Tree Canyon near the Los Angeles Aqueduct Station and about 17 miles North of Mojave, California. The concentrator is known as the Amalia Mill and is now on production with very satisfactory results reported.

The main office of the company is located at Mojave, in charge of C. H. Tyler, mining lawyer and one of the owners. The other owner is E. B. Spitzer, formerly of Trona, California, and well experienced in the production of antimony. The company owns or controls antimony deposits in Kern and Inyo counties sufficient to insure con-

tinuous operation of the mill for an extended period. However, the company plans to give custom ores the preference. It is believed that this is the only custom antimony concentrator in the United States. The methods used in the plant are the result of experimentation by Spitzer.

**TUNGSTEN CORPORATION
ENLARGING MILLING PLANT**

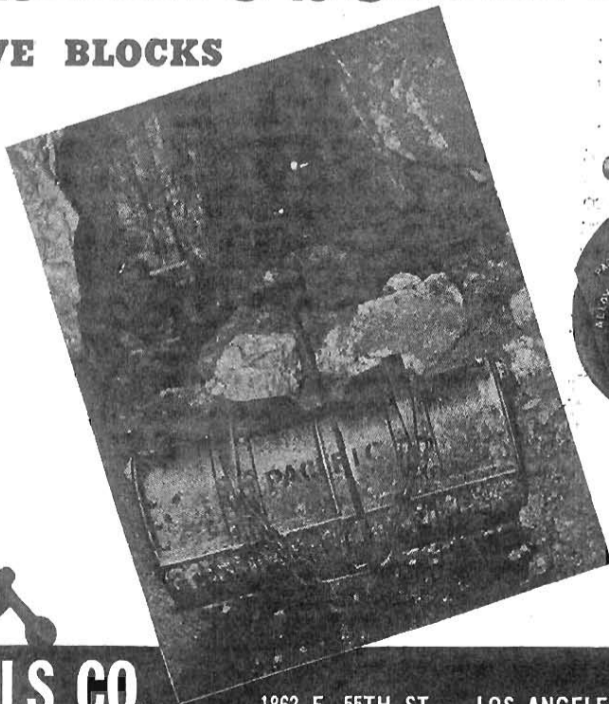
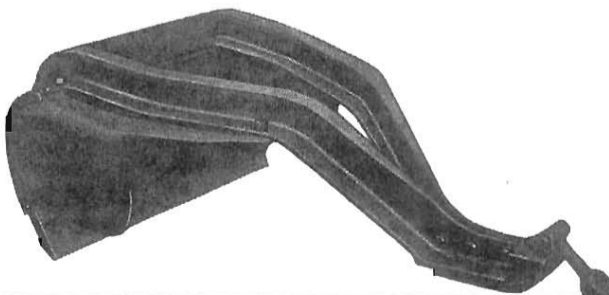
THE Tungsten Metals Corporation is enlarging its 100-ton flotation and gravity concentration mill to handle 150 tons daily. Another 100-kw. power unit is being installed, secondary grinding ball mills, and a secondary crusher, one more bank of flotation cells, and flotation cells for some of the silver oxides. This additional equipment will give maximum recovery and allows large additional tonnages of lower grade ores to be milled.

Company operations have been continuous since their inception three years ago and will be continued during the present construction work. Paul J. Sirkegian of Kimberly, Nevada, is president and manager. Holdings are located in White Pine County near Shoshone, Nevada, and were formerly controlled by the old Minerva Tungsten Corporation. Around 50 men have been employed steadily and this crew will be increased to 65 when full operations are started with the new equipment. The operating staff includes: Harold Dunham, mine foreman; William Trent, mill superintendent; and A. O'Connel, chief clerk and purchasing agent. Horace Bath is secretary-treasurer.

Pacific SLUSHING SCRAPERS

AND SHEAVE BLOCKS

All manganese steel construction . . . Bolted assembly . . . Parts interchangeable for quick conversion . . . Simple, sturdy design . . . Sectionalized blade greatly prolongs life . . . Open hoe, quarter, half and full box types in models and sizes to meet every slushing need.



ALLOY STEEL & METALS CO.

1862 E. 55TH ST. LOS ANGELES, CALIF.

Manufacturers of PACIFIC JAW CRUSHERS • Alloy-Manganese CRUSHER JAWS and MILL LINERS • HAND WINCHES • PACIFIC ROCK BIT GRINDERS • PACIFIC SLUSHING SCRAPERS and SHEAVE BLOCKS • WEARING PARTS for Mining Machinery

Concentrates from Western States

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



Joseph C. Bacon, 124 Nelson Avenue, Nogales, Arizona, has received approval of a \$13,000 RFC mine loan for use in developing his mining property in Santa Cruz County.

The Reconstruction Finance Corporation has approved an \$8,000 mine development loan for Alfred Strong Lewis, Cave Creek, Arizona. Lewis operates the **Maricopa** mine and others in the Cave Creek district.

Work is to be resumed at the **Hulda** mine located in the White Hills near Kingman, Arizona. The mine is opened by a 125-foot shaft and a 50-foot drift has been run west from the bottom of the shaft on a vein ranging from three to five feet in width. Four hundred tons of ore shipped to the Producers' mill from April to July averaged \$35 per ton in gold and silver. The property is owned by Floyd Brown, Box 384, Kingman. Brown is also working the **Grand Army** mine and is subleasing from the Producers' Mines, Inc. He is shipping to the Producers' mill from both the **Grand Army** and the sublease.

S. T. Stevens and associates, operating the **South Sycamore** group 10 miles north of Clifton, Arizona, have holed through from the top of an old winze to the surface, installed a hoist, and are preparing to clean out and retimber the shaft, with a view to further sinking. It is also planned to mine some high-grade ore which remains on the sides of old stopes. A crew of five men is employed. Values are in gold, silver, and copper.

A headframe is being erected and equipment installed at the **Red Rock** mine two miles west of Poland Junction preparatory to unwatering the mine for examination. The shaft is understood to be about 350 feet deep with extensive lateral development on the 100, 200, and 300-foot levels. There is also a 90-foot winze north of the shaft. The mine is being developed under lease by the **Red Rock Mining Company**, Ralph Merritt, president, Box 93, Humboldt, Arizona. James Shea is general manager, in charge of a crew of five men. Values are in gold and silver.

Bullard Gold Mines, Inc., J. P. Smith, general manager, Heard Building, Phoenix, Arizona, has been shipping two cars of ore weekly from the **Bullard** mine eight miles north of Aguila, Arizona. Values are in gold and copper. A crew of eight men is employed at the property under the direction of Ran Bone, mine superintendent.

The 50-ton flotation-gravity concentration plant at the **Ark** and **San Antonio** mines, Kingman, Arizona, is operating at capacity, treating gold and silver ore taken

out in development work. No stoping is being done. The mine is opened by two shafts, 245 and 160 feet deep, with 3,000 feet of drifts. Approximately 50 tons of concentrates are produced monthly, which average \$35 gold, 35 ounces silver, 1 per cent copper, 3 per cent lead, and 1.5 per cent zinc per ton. The property is operated by **Greenamyer Brothers**, Box 430, Kingman, Arizona, employing a crew of 10 men. Charles E. Greenamyer is general manager.

Charges of fraud filed against seven men in connection with sale of \$1,250 in bonds of the **Keystone Copper Mining Company**, Dragoon, Arizona, were dismissed at a preliminary hearing in El Dorado, Kansas, recently. Those freed of the charges were John W. Blood, U. R., T. C., and C. W. Miller, Dr. G. R. Dean, Julius T. Gibson, and Norman Rehg. Rehg, charged also with embezzlement of company funds, was bound over for district court trial and released on \$1,000 bond. The company's property is located near Dragoon, Arizona, and work at the mine is directed by T. C. Miller, secretary.

The mill at the **Boriana** mine 18 miles east of Yucca, Arizona, is now in operation, producing tungsten concentrates from ore mined at the **Boriana**. The plant is a new one, completed just prior to the shutdown in April, 1938. The mine and mill are operated by the **Molybdenum Corporation of America**. H. L. Veatch is manager at the property.

The **Tom Reed Gold Mines Company**, Jack Zwinge, general superintendent, Oatman, Arizona, has discontinued underground work temporarily to permit various changes in underground mining methods. The milling plant will continue to operate on tailings from the old **Ben Harrison** mill, and these, with the addition of custom ores which are being shipped to the mill, will keep the plant active until work is resumed in the mine. It is understood that development is planned at greater depth also, to open up known bodies of commercial ore of undetermined tonnage.

New wage scales are now in effect for employes of the large Arizona copper mines, as a result of the increase in the price of that metal. The mines operate on a sliding scale, based on the copper price. Approximately 5,700 workers of the **Phelps Dodge Corporation** at Bisbee, Morenci, Ajo, Jerome, and Douglas will be affected by the increase, as well as employes of the **Miami Copper Company**, **Inspiration Consolidated Copper 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.

Magma Copper Company, and **Nevada Consolidated Copper Corporation**.

Active mining operations are in progress at the **Samoa** gold property located on the western slope of the **Cerbat Mountains** about two miles east of Chloride, Arizona, which was taken over last year by the **Brighter Days Mining Corporation**, headed by George M. Mitchell, Jr. Other officials include John T. MacEvoy, Lloyd Marsh, and Isadore Miller, vice-presidents, and William Hemingway, secretary and treasurer, all residents of New Jersey. The company has a capitalization of 1,500,000 shares with a par value of \$1. The property is opened by a 330-foot shaft on what is known as the **Samoa vein**. This shaft is cut by an adit tunnel at the 200-foot level and while the hoist operates at the collar of the shaft, all ore is taken out through the adit tunnel. Several hundred feet of drifts have been run from the shaft on both the 200 and 300-foot levels and some stoping has been done. The two levels are also connected by a winze from the 200. The 100 and the 50-foot levels are caved. The company has established a camp several hundred feet down the mountain side where a crosscut tunnel will be driven to cut the **Samoa vein** at a depth of 710 feet, or about 400 feet beneath the bottom of the present shaft. The tunnel, which will be more than 1,600 feet long, will cut at least three other known veins before tapping the **Samoa**. Approximately 110 feet of the crosscut were driven some years ago and this opening has been cleaned out to the present face, track laid, air and water lines installed, and two shifts of miners are now engaged in driving the tunnel ahead. The new camp includes boarding and bunk houses, a blacksmith shop, and a 440-cubic foot compressor plant.

Two men are employed in development work at the property of the **W. R. Glore Mining and Milling Company, Ltd.**, near Wickenburg, Arizona, under the direction of John Creath, general manager, Box 161, Wickenburg. W. R. Glore, 1928 West Thirty-ninth Street, Los Angeles, California, is president of the company.



The **Liberty** mine and mill on Silver Creek 25 miles southeast of Victorville, California, have been sold by E. H. Wambold, Box 624, Victorville, to G. Woodall and associates. A crew of seven men is engaged in development work and it is planned to start milling operations November 1. Wambold has purchased the **Wright** mine and mill, formerly owned by the D. P. Wright estate.

Operators of the **D.W.K.A.H.** mines near Victorville, California, plan to put a crew of men to work at the property in December. Very little work has been done this year, due to the death of A. Kaiser, advertising manager. John Anderson, 933 Arlington Avenue, Compton, California, replaces Kaiser as a member of the group.

Ozark
Smelting and Mining
Co.

●

BUYERS OF
Lead and Zinc Ores
Pigment Grade

●

COFFEYVILLE, KANSAS

**How would war affect us
through mineral shortages?**

Here, for the first time, is a complete survey of the IMPORTED minerals, without which industry cannot function.

Just Out!

Strategic Mineral Supplies

By G. A. Roush, Editor
The Mineral Industry

473 pages . . . \$5.00

The author of this book has made an exhaustive study of America's need for minerals not available from domestic sources. He discusses each from the standpoint of requirements, uses, substitutes, output and supply, tariffs, and political and commercial control.

This is an important book for all those concerned with the protection of American industry from the effects of disturbances in other parts of the world.

●

THE MINING JOURNAL

PHOENIX ARIZONA

MINE TANKS

For permanency and low cost. Complete stocks of clear, dry Redwood and Douglas Fir are available.

CYANIDE PLANTS
AGITATOR TANKS
COOLING TOWERS



ZINC BOXES
THICKENER TANKS
ORE BINS

Write for prices and complete information

PACIFIC WOOD TANK CORP.
461 Market St. San Francisco, Calif.

Modrell Brothers, Alturas, California, are planning the installation of a large stamp mill on their property to work low-grade ore.

A gold quartz vein ranging from seven to 14 feet in width and assaying from \$20 to \$80 per ton has been cut at the Governor mine, Acton, California, according to Francis Gage, manager. The shaft is being extended another 200 feet. Three shifts are working and milling ore is being developed on two faces at the 700-foot level. This provides 150 tons of ore daily. The company recently increased the capacity of its flotation mill from 50 tons daily to 120 tons, and new ore bins capable of storing 515 tons were put in. New change rooms and showers were also recently installed at the property. The entire mine and mill equipment is electrically operated.

Approximately 65 tons of ore are produced daily at the Sulphur Bank quicksilver mine near Clearlake Park, California, and of this total, 46 tons are furnaced in rotary kilns at the mine, while 19 tons are furnaced in a Herreshoff plant at the Great Western mine, 30 miles distant. Two Chevrolet trucks with five-yard dump bodies have been purchased for the ore haul to the Great Western, and a 20-B Bucyrus-Erie, three-quarter yard Diesel shovel is also to be delivered soon. A. F. Wolbert, Clearlake Park, is general superintendent at the mine, and other operating officials include R. E. Boyce, mill superintendent; Frank Robinson, chief electrician; and J. F. Telfer, chief clerk. Worthen Bradley, 922 Crocker Building, San Francisco, is general manager, and E. A. Hammersmith, 920 Crocker Building, San Francisco, is purchasing agent. A crew of 40 men is employed at the property.

E. A. Tracey, Newberry, California, who recently acquired the Vanadium and Silver Reef mines near Newberry, is employing a crew of four men in rehabilitation and development work. The property has not been worked for 10 years. Tracey expects to install a 25-ton mill within a few months. Values are in silver, copper, lead, and vanadium.

The Mount Gaines Mining Company, A. V. Udell, superintendent, Hornitos, California, is producing 45 tons of gold and silver ore daily, which is treated in the flotation-amalgamation plant. A crew of 51 men is employed. Operating officials at the mine include A. J. Meagher, mine foreman; Clarence Guest, mill foreman; N. V. Udell, chief mine engineer; Francis Frederick, chief geologist; A. Caruso, master mechanic.

A crew of six men is employed in development work at the Oro Flame mine, Alleghany, California, which was taken over recently by the Oro Flame Mining Company, E. B. Pond, president, Alleghany, California. A complete camp has been erected and shaft sinking is now in progress. W. D. Morrison, Alleghany, is general manager.

A new tunnel is being driven at the Wind Wheel mine near Columbia, California, in order to provide 110 feet of backs on a pocket shoot. The mine is owned and operated by R. O. Greeves, Box 151, Columbia, California.

T. D. and C. R. Harris, operating a dredge near Lewiston, California, are handling about 2,000 cubic yards of gravel daily, with a crew of 19 men employed. C. R. Harris is general manager at the mine, and other operating officials include Charles M. Harris, Jr., chief mine engineer; L. N. Denison, master mechanic; Amos V. Bowmer, chief electrician; and Victor Soden, purchasing agent.

In the near future a vertical shaft is to be sunk to the 200-foot level to open up low-grade sulphide ore at the Rainbow mine 30 miles from Barstow, California. The property is owned by E. F. Dunn of Los Angeles, and Dan Curtin is superintendent at the mine. No work is being done at present.

E. A. Montgomery, Virginia City, Nevada, has leased a portion of the Pittsburgh-Liberty group near Bridgeport, California, and he is sampling the dumps and the old workings. The mine has not been operated since 1915 and there is no equipment on the property. A. G. Sturgeon, Bridgeport, is co-owner of the group.

Mark Weber and associates have taken over and are unwatering the Church-Union mine near El Dorado, California, and they have also acquired under lease the Lookout mine. The former is a low-grade producer, while the Lookout is a high-grade property. Both are owned by the Seymour Hill estate.

The Shovel Placer Mines, North Bloomfield, California, which discontinued operations last year due to excessive operating costs, has been reorganized with J. D. McPherson in charge. The ground will be completely sampled, up to 2,000 yards to be taken out and washed from each portion of the deposit, following which a working method will be determined.

William Richter and Sons, Oroville, California, are operating two dragline units on property which is under lease from the Nevada Irrigation District, Grass Valley, California. Each unit is handling 2,000 cubic yards of gravel daily. A Koehring 702 dragline with steel floating plant, bulldozer, etc., is working at Garden Ranch two miles east of Oroville, but this ground is expected to be worked out in about three months. A Northwest No. 6 dragline with steel floating plant and bulldozer has recently completed work on a 120-acre tract near Palermo, approximately six miles south of Oroville, and is now being moved to Scott's Flat about six miles east of Nevada City, California. Each boat is powered by a Caterpillar Diesel engine. A crew of 18 men is employed.

Open cut mining operations are to be undertaken at the Oro y Plata mine of the Union Consolidated Mining Company, J. C. Scoles, president and general manager, Murphy, California, in the spring of 1940, unless war conditions prevent. About 200 tons daily will be handled. A 100-ton cyanide plant is already installed at the property and alteration and enlargement to 200 tons will require only a short time. At present four men are employed in development work.

Development is proceeding at the property of Briarcliffe Mines, Ltd., about 12

miles from Plymouth, California, under the direction of A. J. Anderson, general manager. Fifteen men are employed. The shaft has been extended recently to greater depth, a new level opened up, and extensive crosscutting and drifting completed. The company is headed by Gordon B. Thompson, president, and J. D. Good, vice-president, Supertest Building, London, Ontario, Canada.

Work will begin this fall, or early in the spring, on a tunnel to be run under the lava to tap the buried river bed at the Lone Star property of the Smuggler Mining Company, Ltd., near La Porte, California. At present the mine is closed down. Bob Hammer, La Porte, is mine superintendent. The company is headed by W. J. E. Dillabough, 117 West Fifty-eighth Street, New York City.

Active development is in progress at the Sulphide Queen mine, Mountain Pass via Nipton, California, under the direction of Fred B. Piehl, and a crew of eight men is employed. The shaft is completed to the 318-foot level and drifting both ways will be undertaken. A 72-foot winze has been completed on the 214-foot level, 190 feet northwest of the main shaft. It is planned to continue the shaft to a depth of 400 feet, and drifting will be done on the 300-foot level. Raises will be run between levels and to the surface. Harry Lee Martin, 117 West Ninth Street, Los Angeles, is purchasing agent for the mine.

Development work has been completed at the property of the Picacho Mining Com-



pany 18 miles north of Yuma, Arizona, in Imperial County, California, and the mine has been closed down pending final metallurgical tests and completion of financial arrangements for mill construction. The latter is being seriously complicated by the war in Europe and the participation of Canada in that war, as the Picacho company is controlled by the Nipissing Mines Company, Ltd., 1007 Excelsior Life Building, Toronto, Ontario, Canada. Leon W. Dupuy, Box 912, Yuma, Arizona, is general superintendent at the mine.

Two new tunnels are being driven at the property of the Laco Mining Company, Inc., near Los Gatos, California, and it is planned to install a Diesel power plant, compressor, and generator also. The mine is producing about 40 pounds of mercury daily under the direction of C. V. Turner, mine superintendent, and Howard E. Meade, furnace superintendent, Route 3, Box 412, Los Gatos. A crew of nine men is employed.

Equipment is being installed at the property of Babcock and Briggs Mines, Inc., near Trona, California, with a view to con-

tinuing development work. The mine carries values in gold and silver. A crew of six men is employed under the direction of Harry E. Briggs, general manager, Box 82, Trona. James E. Babcock, 1200 Rives-Strong Building, Los Angeles, is president of the company. The company has recently received approval of its application for a \$20,000 RFC mine development loan.

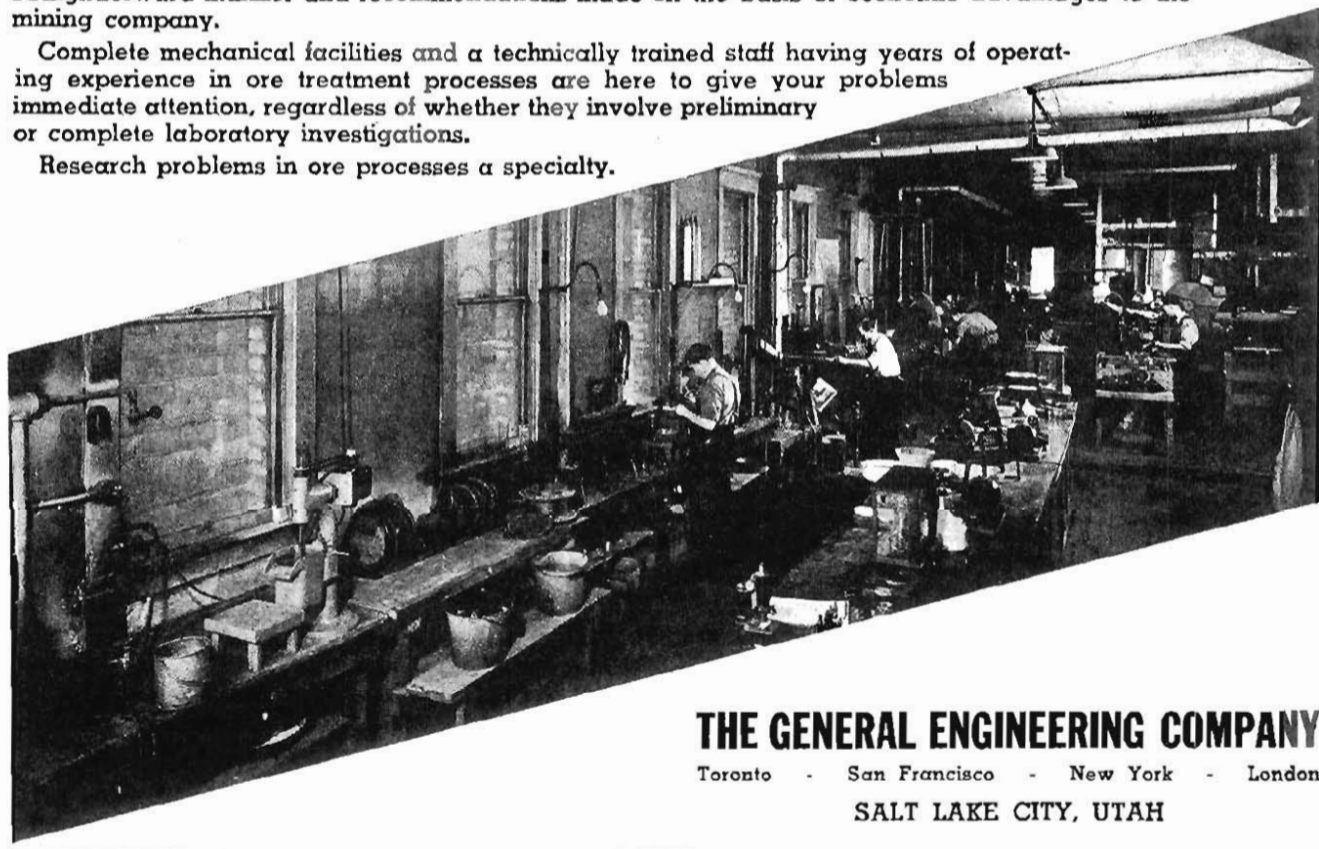
Work is nearing completion on construction of the new 300-ton sand slime cyanide plant at the Greenhorn mine, French Gulch, California, for the Willow Creek Mines, Inc., Corwin L. Cooper, general superintendent, 2147 Butte Street, Redding, California. The plant is being installed by the Western-Knapp Engineering Company of San Francisco. Bert Brown, French Gulch, is mill superintendent; Paul D. Willard, Jr., Schilling, California, is chief mine engineer. The company is headed by Walter Lyman Brown, 206 Sansome Street, San Francisco.

Active operations are in progress at the property of the Virgilia Mining Corporation, Virgilia, California, and a crew of 96 men is employed. Carl H. Potter is general superintendent, and other operating officials include Robert F. Grant, mine superintendent; Shell Patterson, assistant mine superintendent; Arthur W. Hackwood, mill superintendent; Harry Reilly, master mechanic; Rudy Knostman, chief chemist; and Asa J. McElroy, chief clerk, all of Virgilia. Ward Downey, Keddie, California, is chief mine engineer. William Cannon is president and Hartwig A. Cohen is

HAVE your ore tested in a commercial ore testing laboratory where results are reported in a complete and straightforward manner and recommendations made on the basis of economic advantages to the mining company.

Complete mechanical facilities and a technically trained staff having years of operating experience in ore treatment processes are here to give your problems immediate attention, regardless of whether they involve preliminary or complete laboratory investigations.

Research problems in ore processes a specialty.



THE GENERAL ENGINEERING COMPANY

Toronto - San Francisco - New York - London

SALT LAKE CITY, UTAH

SPIRALOK VENT PIPE

A stronger lightweight pipe
for all

AIR - VACUUM - EXHAUST LINES

Sizes 4 to 8 inches

Write for Booklet S

PACIFIC PIPE CO.

319 Main St., San Francisco

The Merrick Conveyor Weightometer

for thirty years has been weighing
crude ores and fines in mills and con-
centrators throughout the world,
thereby increasing efficiency of op-
eration.

MERRICK SCALE MFG. CO.

178 Autumn St., Passaic, N. J.

Flotation Reagents

Bear Brand Xanthates

Sunny South D. D. Pine Oil-A

Complete line of all standard flota-
tion reagents, also metallurgical and
assay chemicals carried in stock.

H. J. Baron Company

805 Mills Building

EL PASO TEXAS

ALLISON STEEL MFG. COMPANY

Mine and Mill Buildings Mine Rails
Ore Cars Steel Gallows Frames
Cochise Jackhammers Ball Mills
Muck Plates Crucible Drill Steel
Detachable Bits — Sullivan
Regrinding of All Types of Detachable Bits

South 19th Avenue, Phoenix, Arizona
Phone: 3-5161

Pacific Northwest
Headquarters for

High Grade White Iron

GRINDING BALLS

Preferred by Largest Mines
In the West

Inquiries Solicited.

Northwest Steel Rolling Mills

4315 9th Ave., N.W. — Seattle, Wash.

general manager, with headquarters at 712
De Young Building, San Francisco.

Thomas P. Hindman, 535 Manchester
Terrace, Inglewood, California, has been
engaged in constructing a road to the
Yolanda mine in the Turtle Mountains near
Rice, California, and upon completion of
that work it is planned to construct a
camp building at the mine. A shaft-sinking
program is also included in future plans for
the property.

A winze is being sunk on the ore body at
the Ranchito mine, Julian, California, and
a new bunk house is under construction.
New equipment has recently been installed
at the mine, including a 40-horsepower
Twin City engine on a Gardner-Rix com-
pressor, and a 36-horsepower Hart-Parr
on a 25-kilowatt generator for pumping
water from the mine. The stamp mill is
handling eight tons of gold ore daily and
recovery is by amalgamation. The prop-
erty is operated on a partnership basis by
William and Ralph Martin, and the latter
is in charge at the mine. Eight men are
employed.

A crew of 25 has been engaged in de-
velopment work on the five mines of the
Old Diggings Consolidated Mines, G. Cleve-
land Taylor, general manager, Box 958,
Redding, California. The group includes the
Reid, Texas, Central, Evening Star, and
Mammoth. Approximately \$75,000 has
been spent in development, mine rehabilita-
tion, and mill construction, and it is esti-
mated that another \$30,000 will be re-
quired to place the property on a produc-
tion basis of 100 tons daily. The mine is
equipped with a 100-ton flotation plant.

A 300-foot drift has been run on the
vein at the Sadie D. and Birdie L. claims
near North Bloomfield, California. It is
planned to extend the drift for another
several hundred feet and a 300-foot cross-
cut will be run in the hanging wall also.
The mine is operated by Bert Davidson,
and is equipped with a five-ton amalgama-
tion, gravity concentration plant, which is
treating gold and silver ore from the prop-
erty.

The Comanche Gold Dredging Company,
311 California Street, San Francisco, Cali-
fornia, has received approval of its appli-
cation for a \$200,000 RFC mine loan to
be used in connection with its mining op-
erations in San Joaquin County, California.
The company some time ago acquired op-
tions on land in the vicinity of Wallace in
San Joaquin County.

The RFC mine loan division has approved
a \$3,600 loan for a mining property lo-
cated in Siskiyou County, California, op-
erated by Frederick A. Hebbard, Box 98,
Gazelle, California.

The application of the Oroville Gold
Dredging Company, W. H. Wandesforde,
president, 2052 Bird Street, Oroville, Cali-
fornia, for a \$145,000 mine loan has been
approved by the Reconstruction Finance
Corporation.

A fire at the Buchanan mine southeast
of Tuolumne, California, destroyed all
buildings except the mill. A house and
bunk house were burned with a loss esti-
mated at several thousand dollars. There
was no insurance. J. Andrew Cook, Tu-
olumne, operates the property.

Sinking and drifting are in progress at
the property of the Zaca Mining Corpora-
tion near Markleeville, California. The 100-
ton flotation plant is treating about 70
tons of ore daily, with values in gold,
silver, lead, zinc, and tungsten. A crew
of 12 men is employed under the direction
of Steve Maffi, general superintendent.
Harold Eickleberger is mill superintendent
and Jack Hughes is master mechanic. N.
H. Bennett, Russ Building, San Francisco,
is president and general manager.

Work is nearing completion on the in-
stallation of electrical equipment, a new
hoist and a compressor at the Ortega mine
near Mariposa, California, which was taken
over recently by E. R. Baker and asso-
ciates. Preparations are being made for
extending the shaft from the 150-foot level
to the 350-foot level. A station will be
cut at the 250-foot point and drifting will
provide two new levels from which to mine.
The property is at present equipped with
a 20-ton stamp mill with provisions for
amalgamation and gravity concentration.
Installation of a 50-ton plant is proposed
when sufficient development has been com-
pleted to warrant it. The group is at pres-
ent operating under a trusteeship, but it is
planned to incorporate later. Baker is
general manager and purchasing agent.
Dennis Mullins is general superintendent
and employment agent, and Ernest Rablin
is mill superintendent.

A 70-foot raise has been completed and
stopping is in progress at the Enterprise
mine, Raymond, California. Drifting and
crosscutting are planned to intersect an-
other ore shoot. The mine is equipped
with a 30-ton amalgamation plant. Power
is furnished by a 30-horsepower Diesel en-
gine and 40-horsepower Western engine.
Three men are employed under the direc-
tion of S. L. Sampson, lessee.

Reopening of a 350-foot winze and cross-
cutting for a distance of 500 feet are in-
cluded in development plans for the prop-
erty of Hite Mines, Inc., located on the
south fork of the Merced River 25 miles
northeast of Mariposa, California. Wen-
dall Thomas, Incline, California, is mine
superintendent, directing a crew of eight
men. Norman Whitmore, 417 South Hill
Street, Los Angeles, is president and gen-
eral manager.

Recent development work completed at
the property of the Mayme Gold Mining
Company, James Davis, superintendent, Box
124, Downieville, California, includes a
235-foot train tunnel and 300 feet of open
cut. It is proposed to extend the open cut
an additional 150 feet to reach the main
channel. A ledge 16 feet wide has been
encountered, assaying \$7.70 a ton on the
surface, and development of the ledge is
planned for the near future. Four men
are employed at the property.

The Redding Creek placer mine eight
miles southeast of Douglas City, Califor-
nia, will resume active operations this fall,
after two years of inactivity. Preliminary
work incident to setting up the hydraulic
giants is under way, and necessary repairs
are being made to the \$60,000 flume which
carries water from the Redding Creek dam
to the scene of operations on the Wallace

Ranch property. Present plans call for full-time operation of three giants as soon as sufficient water is available. Actual mining operations will continue along the creek bed on the 400-acre Wallace Ranch. The property will be operated by the **Clarise V Mining Company**, John J. Kenney, president, 207 Gough Street, San Francisco. T. S. Wallace is foreman at the mine.

T. C. Kelly, Hayfork, California, is reported to be making excellent gold recovery from ore mined at his property near Hayfork. A fine grain dike, containing flat quartz stringers, is followed by a main adit level for a distance of 600 feet. The dike is about 20 feet wide. Recent ore production has been from a 30-foot drift on one of the flat veins 30 feet above the main level. The vein varies from six inches to 529 feet in width. Considerable work also has been done from a 185-foot adit level 80 feet above the main tunnel. The new raise and the winze from this upper level are expected to connect.

The downward extension of a productive ore shoot has been opened by a north drift on the 400-foot level of the **Ferguson mine**, operated by the **San Juan Ramsey Company**, Incline, California. Another ore body has been disclosed by a raise from the same level and the mining of satisfactory ore is proceeding in upper workings. A. S. Wyner is manager of the company.

The **Gold Hill mine** near Big Bear Valley, California, has been sold by the firm of Rose and Tarter to a syndicate of Beverly Hills and Hollywood investors headed by



Leo Morrison, 204 South Beverly Drive, Beverly Hills, California, for a consideration of \$100,000. Under the terms of the agreement a substantial cash payment was made and the balance will be paid in royalties of 10 per cent on all ore mined and milled. The new owners plan extensive exploration looking to the development of larger and more substantial ore bodies, and erection of a 200-ton mill is also planned, which will handle custom ore in addition to that from the mine. The property has been under development for the past five years by A. L. Rose, George W. and Mae Tarter. They had installed an Ingersoll-Rand compressor and other equipment for light mining, but this will be replaced with heavier and more adequate machinery. Operations will be carried on under the firm name of **Leo Morrison, Inc.**, and work will be on a three-shift basis. Rose has been retained as mine foreman. A 550-foot tunnel makes the property easily accessible for examination and engineering surveys.

A 10-stamp mill is being placed in operation at the **Hall claim** near Alturas, California, according to E. C. Ahlstorm, who is

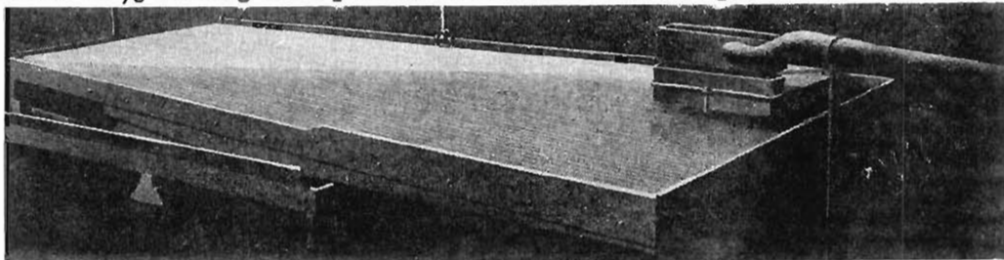
one of a group of some 15 men engaged in the cooperative development of the mine. It is understood that considerable \$40 ore is in sight at the property.

The **Gwalia Gold Mining Company** has awarded a contract to the **Western-Knapp Engineering Company**, 760 Folsom Street, San Francisco, California, for construction of a 35 to 40-ton flotation plant at the **Pioneer mine** near Pioneer Station, Jackson, Amador County, California. The new plant will consist of a coarse ore bin and a 185-foot conveyor, part of which will be used as a picking belt, equipped with water sprays. The conveyor will feed to a vibrating screen, the undersize from which will be carried by a chute to the classifier. The oversize will be fed into a reduction type crusher. The mill proper will consist of an ore feeder and a 4 1/2 by 4 1/2-foot ball mill in closed circuit with a Wemco classifier. The classifier overflow will pass to a sump, from which it will be pumped to a conditioner tank. The tank will be followed by four 28-inch Fagergren flotation cells, one of which will be used as a rougher and three as cleaners. The middlings from the cleaner cells will discharge into the sump and will then be pumped back to the conditioner. Concentrates will be dried on Wemco tilting vacuum pans. W. Bourret, Pine Grove, California, is mine superintendent. H. W. Gould, Mills Building, San Francisco, is general manager.

The ditch of the **McBride-Caledonia mine**, La Porte, California, has been extended about three-quarters of a mile during the past two months and is now near

A RECORD WE ARE PROUD OF

Eleven years' continuous running—day and night without a cent for repairs and making an average extraction of 99% during that period is a record we are proud of. This is the performance of two Gibson Roller Bearing Concentrating Tables operating at the Melrose Plant of the National Lead Company.



SAVES GOLD OTHERWISE LOST

The Gibson Impact Amalgamator

Repeat orders coming in from all parts of the world are positive proof of the efficiency of the Gibson Impact Amalgamator in saving the fine gold, amalgam and mercury that escape from the other amalgamating devices.



Built in sizes from 25 tons to 2000 tons capacity

Write for new catalogue describing Gibson Counter Balanced Rod and Ball Mills, Prospectors' Friend Mills, Flotation Cells, Amalgamators, Concentrators, Rock Breakers, Ore Feeders, Mercury Feeders, Oil Feeders and Retorts. See our exhibit at Mines & Metals Building, World's Fair, Treasure Island.

W. W. GIBSON

1801 WEBSTER ST., ALAMEDA, CALIFORNIA

ing completion. The ditch, which is nine feet wide at the top, four feet wide at the bottom, and four feet deep, will almost double the water supply, making possible the use of two hydraulic giants instead of one. The property, which is operated by San Francisco and Stockton, California, interests, is said to contain 4,500,000 cubic yards of white quartz gravel. Lewis F. Johnson, Box 2022, Stockton, is superintendent.

Isham and Isham, geophysical engineers of Sacramento, California, have recently completed a geological and geophysical survey of the **William Poor** mine, located in the Kelsey district, for Russell J. Wilson, owner and operator of the **Black Oak** mine at Garden Valley, California. The Poor property was taken over by Wilson recently and a hoist, compressor, and necessary building are being moved in preparatory to exploration work. The power line has been completed to the mine and prospecting is now under way. The mine has been opened by a 50-foot shaft, which is being unwatered. Ore is to be hauled to the **Black Oak** mill for treatment.

The new ball mill, concentrator, and other milling equipment have been completed and placed in operation at the **Big Sandy** and **Gray Eagle** mines, Kelsey, California, under the direction of Earl M. Cooper, general superintendent, Kelsey. Lessees are working on the **Gray Eagle**, while shaft work is being done by day labor. About 10 men are employed. Stanley B. Waters, Georgetown, California, is mill superintendent, and W. L. Osborne, Placerville, California, is chief mine engineer.

The two 150-ton ball mills at the **Big Canyon** mine of the **Mountain Copper Company, Ltd.**, William F. Kett, general manager, 351 California Street, San Francisco, California, will be moved to the **Hallsted** mine north of Virgilia, California, provided tests now being made at the mine prove to be satisfactory. The company optioned the **Hallsted** recently and a campaign of diamond drilling was inaugurated to test the gold values.

Reagan Brothers, Happy Camp, California, have leased the **Shorty Lewis** mine, owned by **Gravel Mines, Ltd.**, C. C. Broadwater, president, 2921 Chapman Street, Oakland, California. The mine is located on **China Creek** about six miles east of Happy Camp. Water is developed in the creek and is delivered to the mine under a 175-foot head. Reagan Brothers also operate the **China Point** mine nearby.

Water is being developed in **Oak Flat Creek** for use in mining operations at the **Lindy** mine near Clear Creek, California. Present work is being done by hydraulic methods but it is understood that equipment will be installed for mechanical methods. A crew of men is engaged in preparing the property for winter operations. The mine was formerly known as the **Buzzard Hill**. Emery Barney and Ralph Watson acquired the property recently.

An 18-foot vein of \$5 to \$6 gold ore has been encountered in the **Log Cabin** mine at Shingle Springs, California, which is being reopened by G. H. Morse, 316 Sixteenth Street, Sacramento, California. Old mine workings are being reopened and

a 40-foot winze is to be extended another 60 feet. For the present, work will be confined to development. Three men are employed. T. E. Massie, 2121 K Street, Sacramento, is general manager.

The **Colorado Milling Company** is installing a 25-ton cyanide plant on property adjoining the **Dollar Bill** mine in the **Gold Basin** district 10 miles north of Vidal, California. The plant is to be operated as a custom mill and will treat ore from the **Dollar Bill** and other properties in the basin. At the **Dollar Bill**, 300 feet of drifts and raises were completed in June, but the property is now idle, awaiting completion of the mill. As soon as the plant is in operation it is planned to start production, and shaft sinking will also be continued to the 250-foot level. William R. Baird, Vidal, is general superintendent of the **Dollar Bill**.

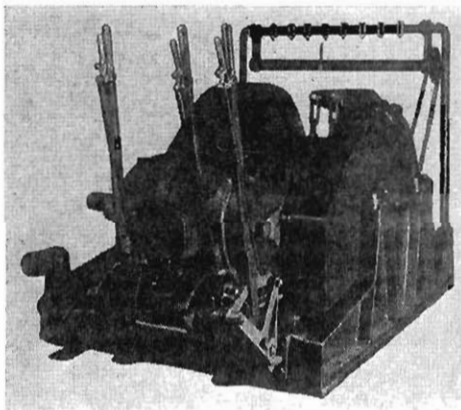
The 50-ton flotation mill at the **Hoge** mine near Nevada City, California, is treating 18 tons of gold ore daily. A crew of 14 men is employed under the direction of Thomas J. Haddy, mine superintendent, 437 Zion Street, Nevada City. Alvin Walther is mill superintendent and Howard Burr is master mechanic. The mine is owned and operated by the **Hoge Development Company**, A. W. Hoge, president, Nevada City.

Work is under way on the installation of a 100-ton mill at the **Giant King** mine south of Washington, California. The mine was taken over recently by C. Patterson, structural engineer and contractor, and W. E. Narkaus, mining engineer. The property comprises about 100 acres and is

HENDY

"New Series" Mine Hoists

Single and Double Drum



Durable and Convenient to operate. Comply with Safety Regulations

COMPLETE Equipment for Mines and Mills

Send for Bulletins & Information — Dept. A

JOSHUA HENDY IRON WORKS

Address Sales Office: 206 Sansome St., San Francisco

Complete Amalgamation Plants

5 TO 10-TON PLANT

15 TO 20-TON PLANT

Independence Ellis mill and screens . . . Rock breaker, 3 1/2-in.x6-in. . . Ellis amalgamator, 12-in. x 48-in. . . Ore feeder . . . Grizzly screen, 2-ft.x7-ft., 1/2-in. mesh . . . 40-ft. 3-in. belting, four ply . . . Gas engine, 2 hp.

B. I. Ellis mill including screens . . . 40M ore feeder . . . Rock breaker, 6-in. x7-in. . . Grizzly, 2 1/2-ft. x8-ft. 1/2 in. . . Ellis amalgamator, 12-in.x48-in. . . 50 ft. 4 in. belting . . . Two 3-hp. gas engines.

Complete plant . . . \$500

Complete plant . . . \$1,100

The ELLIS MILL will grind anything that can be ground or pulverized, wet or dry, to a definite mesh. In one operation, using only one-quarter the power other types of mills require. NO GEARS. NO GREASE, NO BEARINGS, NO FRICTION.

All wearing parts are now "Moly-Chrome" castings. Above prices in force until further notice and are for complete plants ONLY; as above listed.

ELLIS MILLS MFG. COMPANY

(A Voluntary Trust under Laws of Nevada)

BOX 126

ROCKAWAY BEACH

CALIFORNIA

Mexican Manufacturing Branch: Guadalajara, Jal., Mexico
H. V. Jones, Agent, Apt. 497, Pedro Moreno, 228.

owned by William Luce of Reno, Nevada. Recent development has opened a vein 20 feet wide carrying about \$10 per ton in gold. Several test shipments of ore have been made. Narkaus is acting as general manager at the mine and John Rondoni is superintendent, directing a crew of 15 men.

A number of applications for permission to appropriate water for mining purposes have been filed with the California Division of Water Resources. Among these are: D. W. Butner, 555 Colusa Avenue, Berkeley, California, two-thirds of a cubic foot per second from Mokelumne River, estimated cost \$3,000. Emelie Ricci, Sonora, California, two cubic feet per second from McKinney Creek. C. S. Hutson, Pacific, California, five cubic feet per second from the South Fork of Silver Creek, estimated cost \$20,000. Walter Lenkeit, Hoopa, California, three cubic feet per second from Little Red Cap Creek, estimated cost \$1,000. Rublin Quartz Mining Company, Foresthill, California, one cubic foot per second from Spring Creek. George S. Wheeler, Foresthill, California, three cubic feet per second from Little Grizzly Creek. L. D. Nelson, Clear Creek, California, one cubic foot per second from Tinkham Creek.

A new Straub Kue-Ken crusher has been installed at the Rawhide mine of the Canyon Mines Corporation, Baxter, California, which has reduced the crushing time to less than one-fourth the time previously required, and raised the capacity of the ball mill from 50 to 100 tons daily. Frank B. Keever, Baxter, is general manager of the corporation.

The Alabama California Gold Mines Company, William A. Beaudry, general superintendent, Penryn, California, which has been in the development stage for several years is now on a production basis. It is equipped with a 300-ton mill which is treating 225 tons of ore daily, mill heads averaging more than \$8 a ton. The three-compartment shaft is nearing the 1,000-foot mark, where a new level will be opened up. Mining at present is in progress on the 350, 500, 650, and 800-foot levels and there are said to be approximately 15,000 tons of ore broken in the stopes. Mark Ewald, Olympia, Washington, is president of the company.

COLORADO

A contract for 1,000 feet of diamond drilling has been awarded to the Sullivan Machinery Company by the Alma Syndicate, Inc., with tentative arrangements for a second 1,000 feet if weather permits. The drilling is being done on the recommendation of the Hans Lundberg, Ltd., which recently made a geophysical survey of the property. H. O. Promnell, Alma, is supervising Alma Syndicate operations. N. P. Otis, 707 First National Bank Building, Denver, is president and general manager.

Winter operations are planned by the United States Molybdenum Corporation, C.

W. Savery, 1560 Downing Street, Denver, Colorado, president. Surface work is being done on the Runaway Horse, Nos. 2 and 3, and the August claims. The property is located in the Daly district of Clear Creek County. D. A. Knight of Empire is the engineer in charge.

Theodore Abbott, Lake City, is engineer in charge of operations at the Golden Wonder mine for the San Juan Gold Mines Company in Hinsdale County near Lake City. A carload of high-grade ore was recently shipped to the Golden Cycle mill.

While practically all of the properties of the Stratton Cripple Creek Mining and Development Company are operated by lessees, the company is reported to have started one project on its own account. The Globe Hill mine is being prospected by steam shovel. The company's holdings are all located in the Cripple Creek district. D. P. Strickler of Colorado Springs is president and J. O. B. Keener, Box 146, Cripple Creek, is general superintendent, assisted by James H. Keener.

The 750-foot shaft of the Coeur d'Alene mine at Central City, Colorado, will be reopened its entire depth by a group of easterners who recently agreed to finance the reopening of the property. T. H. Jenks, who recently returned to Colorado from New Mexico, is in charge of the work.

The Minnie B. mine in French Gulch, Summit County, near Breckenridge, Colorado, is being reopened by the Horn broth-

ers of Montana, who have come to Breckenridge to take charge. Production is expected to be started in the near future.

A crew of 20 men is employed by the Alie Bell Mining and Milling Company, S. A. Mock, 1010 University Building, Denver, Colorado, president and general manager. The company is leasing property at Cripple Creek from the Stratton Cripple Creek Mining and Development Company, producing about 35 tons of gold ore daily and continuing development work. The property is opened to a maximum depth of 165 feet. H. W. Patton of the Denver office is secretary and business manager and J. N. Kerr, Denver, is consulting engineer.

The RFC recently published a list of mining loans approved from January 1, 1939, to August 31, 1939. The only Colorado concern included in this list is the Q. B. Mining Company, which operates in Teller County. The loan approved for the Q. B. concern amounted to \$10,000. The mining company, whose offices are at 716 Symes Building, Denver, operates a lease on the Black Belle mine in the Cripple Creek district. James B. Brown of Victor is manager.

A 50-ton concentrating mill is being built on a group of copper-molybdenum claims near Cowdrey, Colorado. An eastern group acquired the property located in Jackson County, near Cowdrey, from M. P. Cloonan, Box 1082, Walden, Colorado, and after some exploratory and development work

PRODUCTS OF THE WEST

Made in the West for Western Needs

Wire : Nails : Spikes
Staples : Brads : Tacks
Bale Ties : Woven
Wire Fences : Chain
Link Fence, Fittings and Complete
Enclosures : Netting
Barbed Wire : Gates
Steel Posts : Rail
Track Accessories
Fence Stays : Blooms
Billets : Slabs
Merchant Bars and
Shapes : Reinforcing
Bars and Mesh : Bolts
Nuts : Rivets : Cast
Iron Pipe and Fittings
Pipe Bands : Pig Iron
Wire Rods : Grizzly
Bars : Angles : Beams
Channels : Plate : Flats
Hot Rolled Strip
Grinding Rods & Balls
Grader Blades : Scarifier and Rooter Teeth



The Colorado Fuel and Iron Corporation

General Office: Denver, Colorado

Steel Works: Pueblo, Colorado

**MICHAEL CURLEY WILL RETIRE,
C. R. KUZELL TO SUCCEED HIM**

MICHAEL CURLEY has announced that he will retire on December 31, 1939, as manager of the New Cornelia Branch, Phelps Dodge Corporation, Ajo, Arizona. He has been associated with the Ajo property since 1913, serving first as superintendent under the late General John C. Greenway.

Before moving to Arizona in 1913, Curley was assistant to General Greenway in mining activities at Colrairie, Minnesota. Diamond drilling and test holes convinced the pair that rich copper ore was to be found at Ajo and the results of their planning are the huge open pit and recovery plant now there.

Upon the death of General Greenway in 1925, Curley became general manager and he continued in the position of manager when the property was taken over later by the Phelps Dodge Corporation. He was instrumental in working out plans for development of the town of Ajo as the camp grew and, as a result, it has become a model mining community.

Curley also sponsored a number of community enterprises and was actively interested in social work. When employment dropped with the decline of copper prices during the depression, welfare organizations came under his supervision, and when emergency aid was organized in Arizona, Curley was a member of the first state board to administer assistance. He also was a member of the first Pima County Welfare Board.

Charles R. Kuzell, at present smelter superintendent of the United Verde Branch at Jerome, Arizona, has been named to succeed Curley at Ajo. He has been associated with the Jerome property since 1918. Prior to that he had been connected with the Anaconda Copper Mining Company at Great Falls and Anaconda, Montana, for eight years, rising through various positions to that of smelter superintendent before moving to Arizona.

He is a graduate of the Case School of Applied Science, receiving his degree of B. S. in mining in 1910, and that of metallurgical engineer in 1914. Kuzell has been granted patents on his designs for an improved reverberatory furnace, and improved arrangement of reverberatory furnaces and waste heat boilers.

**NEW CUSTOM ANTIMONY PLANT
NEAR MOJAVE, CALIFORNIA**

A 150-TON daily capacity custom antimony concentrator has been completed by the S. T. M. Mines in Pine Tree Canyon near the Los Angeles Aqueduct Station and about 17 miles North of Mojave, California. The concentrator is known as the Amalia Mill and is now on production with very satisfactory results reported.

The main office of the company is located at Mojave, in charge of C. H. Tyler, mining lawyer and one of the owners. The other owner is E. B. Spitzer, formerly of Trona, California, and well experienced in the production of antimony. The company owns or controls antimony deposits in Kern and Inyo counties sufficient to insure con-

tinuous operation of the mill for an extended period. However, the company plans to give custom ores the preference. It is believed that this is the only custom antimony concentrator in the United States. The methods used in the plant are the result of experimentation by Spitzer.

**TUNGSTEN CORPORATION
ENLARGING MILLING PLANT**

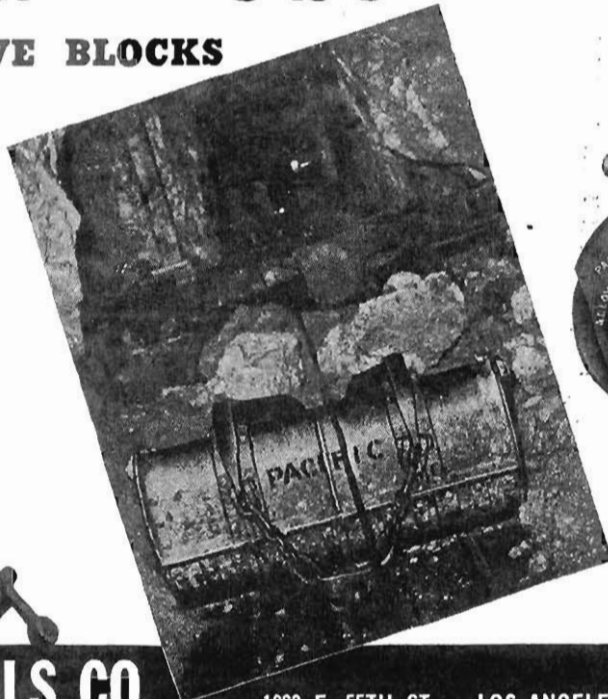
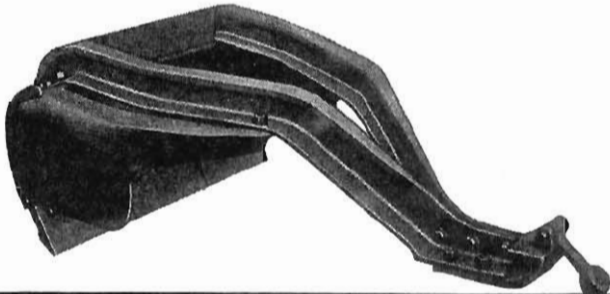
THE Tungsten Metals Corporation is enlarging its 100-ton flotation and gravity concentration mill to handle 150 tons daily. Another 100-kw. power unit is being installed, secondary grinding ball mills, and a secondary crusher, one more bank of flotation cells, and flotation cells for some of the silver oxides. This additional equipment will give maximum recovery and allows large additional tonnages of lower grade ores to be milled.

Company operations have been continuous since their inception three years ago and will be continued during the present construction work. Paul J. Sirkegian of Kimberly, Nevada, is president and manager. Holdings are located in White Pine County near Shoshone, Nevada, and were formerly controlled by the old Minerva Tungsten Corporation. Around 50 men have been employed steadily and this crew will be increased to 65 when full operations are started with the new equipment. The operating staff includes: Harold Dunham, mine foreman; William Trent, mill superintendent; and A. O'Connell, chief clerk and purchasing agent. Horace Bath is secretary-treasurer.

Pacific SLUSHING SCRAPERS

AND SHEAVE BLOCKS

All manganese steel construction . . . Bolted assembly . . . Parts interchangeable for quick conversion . . . Simple, sturdy design . . . Sectionalized blade greatly prolongs life . . . Open hoe, quarter, half and full box types in models and sizes to meet every slushing need.



ALLOY STEEL & METALS CO.

1862 E. 55TH ST. LOS ANGELES, CALIF.

Manufacturers of PACIFIC JAW CRUSHERS • Alloy-Manganese CRUSHER JAWS and MILL LINERS • HAND WINCHES • PACIFIC ROCK BIT GRINDERS • PACIFIC SLUSHING SCRAPERS and SHEAVE BLOCKS • WEARING PARTS for Mining Machinery

Robert F. Koomler, 39, former superintendent of the Vandalia mine near Shingle Springs, California, died October 20 at Weimar, California. He had been a patient in the Weimar Sanatorium for the past 18 months. Before moving to California, Koomler had been associated with the Gnome Gold Mining Company at Elk City, Idaho.

William Lawrence Austin, mining and metallurgical engineer, died September 17 at his home in Riverside, California. He was 85 years old. He was a graduate of the University of Heidelberg and his work had taken him to all parts of the world. His membership in the American Institute of Mining and Metallurgical Engineers dated from 1882.

Nathan L. Amster, former prominent Arizona mining man, died September 22 at his home in New York City following a heart attack. He was formerly president of the Shannon Copper Company and was also interested at various times in many other Arizona properties, among which were the Old Dominion, Arizona Commercial, and the Superior and Boston.

Niles Herman Fleming, assistant superintendent of the El Paso Smelting Works, died October 29 at El Paso, Texas. He was 45 years old. Fleming had been associated with the American Smelting and Refining Company for a number of years and prior to his connection with the El Paso smelter he had been with the A. S. and R. smelter at Matehuala, San Luis Potosi, Mexico.

William H. Bray died recently at Reno, Nevada, following a brief illness. He was well known in California, having engaged in mining operations as early as the 1900's in the Nevada City district. He was at one time superintendent of the Posey mine in the Willow Valley section and later went to Nevada, where he operated a number of properties. He was credited with the discovery and opening up of several large properties in the vicinity of Ely, Nevada.

FOSTER S. NAETHING

FOSTER S. NAETHING, manager of Mammoth-St. Anthony, Ltd., and vice-president of St. Anthony Mining and Development Company, Tiger, Arizona, died October 24 in Glencove, New York, following a heart attack suffered nine days previously. He was 52 years old. Naething had been associated with the Mammoth-St. Anthony and the St. Anthony company since 1934, and he was also a director of the Barrod Mining Company at the time of his death.

He was born at Lakewood, New Jersey, and was educated at Yale Sheffield Scientific School, where he received a Ph. B. After leaving school he served for a year as assistant instructor in metallurgy at the institution and in that same year, 1908, he joined the engineering staff of the United Rico Mines Company. From there he went to the engineering staff of the Miami Copper Company and in 1913 was made assistant to the superintendent.

Two years of consulting work followed, after which he was named field engineer for the St. Joseph Lead Company, a post

which he held for three years. He then went to Kansas Explorations for two years as manager. In 1924 he again took up consulting work and continued in that field until 1930 when he was named vice-president and general manager of the Evans Wallower Lead Company. During 1932 and 1933, Naething was associated with Dr. U. C. Tainton and the Bethlehem Steel Company in the development of Bethanized wire, and the following year he took over the positions which he held at the time of his death.

Naething was a member of the Yale Engineering Society, the Mining and Metallurgical Society of America, the American Institute of Mining and Metallurgical Engineers, and the American Electro Chemical Society.

DEEPER DEVELOPMENT PLANS ANNOUNCED BY SUNSHINE

THE Sunshine Mining Company is planning to sink its Jewell shaft 500 feet from the present bottom or 3,163-foot level. The company is carrying on extensive development work and maintaining steady production.

During September of this year the highest monthly tonnage of ore was mined, 29,330 tons, compared with a low of 22,650 tons in July. Silver recovered in September amounted to 955,244 ounces, which compares with the lowest monthly recovery of 643,111 ounces in January. Average head mill feed assays were 33.2 ounces or 9 ounces of silver higher than last January. A crew of around 550 men is employed and 1,000 tons of ore are handled daily in the company's 1,200-ton flotation mill.

R. M. Hardy, Box 33, Yakima, Washington, is president, and R. D. Leisk, Box 1080, Kellogg, Idaho, is general manager.

CALIFORNIA MINING GROUPS PLAN CLOSER COOPERATION

THE Mining Association of the Southwest, at its September meeting in Los Angeles, laid the foundation for closer cooperation in the industry with respect to consideration of major problems. A resolution adopted calls for the setting up of a statewide mining industry conference group, to consist of a committee of five from each mining association in the state.

The group is to meet at some convenient point within the state at any time, in response to a call from its chairman, to consider any question or questions regarded as being of extraordinary importance by any or all of the group committees.

At each such meeting a chairman will be chosen by the group, and no chairman will be permitted to serve as such at two successive meetings. At the conclusion of each meeting, the group will elect a new chairman whose duty it will be to call the next meeting and act as its presiding officer. The set-up contemplates rotation of chairman from committee to committee.

Under this plan, questions of paramount importance, and ideas which threaten to develop controversies, will be taken up by the group and given careful consideration, after which the several committees will report back to their respective associations.

Their conclusions may or may not be accepted. The group will be merely a deliberative body.

The chairman of the Mining Association of the Southwest appointed as its conference committee W. C. Browning, general manager of the Golden Queen Mining Company; James Babcock, president of the Soledad Mojave Mining Syndicate; Roy Moore, general manager of the Cactus Mines, Inc.; Robert Linton, consulting engineer; and James F. Collins, chairman of the legislative subcommittee of the Los Angeles Chamber of Commerce mining committee. The appointments were unanimously ratified at the meeting.

MINERAL IDENTIFICATION SUBJECT OF LAUCKS' PAMPHLET

LAUCKS LABORATORIES, INC., announces a handy reference, "How to Identify Minerals Quickly in the Field," which will interest prospectors, mining engineers, and others in the mining field. The pamphlet is available without charge from the office of the firm at 315 Maritime Building, Western Avenue at Madison Street, Seattle, Washington.

It lists fully the properties of 40 of the common minerals and suggests ways to recognize these minerals by their luster, weight, color, streak, magnetism, solubility, etc. The various processes of ore treatment, such as amalgamation, cyanidation, chlorination, smelting, and concentration are also briefly explained.

U. S. NO LONGER DEPENDENT ON FOREIGN SOURCES FOR POTASH

THE United States is no longer dependent upon foreign sources for potash, according to R. W. Mumford, consulting engineer for the American Potash and Chemical Corporation, Trona, California. While this country was entirely dependent upon Germany for potash at the outbreak of the World War, three plants have since been developed in the United States which can be stepped up to supply domestic needs.

There are now two centers of potash production, one at Searles Lake near Trona, California, where borax and potash are obtained from brine produced by wells drilled in the ordinarily dry lake bed. The other two plants are near Carlsbad, New Mexico, where potash is mined from shafts running 1,000 feet underground.

In 1938, the United States produced 9.3 per cent of the world output of potash salts, according to Mumford, and this country's product contains a higher portion of potash. In K₂O units, the United States produced 316,951 tons and imported 193,609 tons last year. Exports totaled 51,800 tons.

Potash consumption in this country increased from 270,000 tons in 1913 to about 400,000 in 1938, stated Mumford. Contrary to popular belief, potash is not used in preparing military explosives, except for blasting charges for certain shells, and for pyrotechnic shells and rockets. Its chief use is as a plant food, but it is also essential for industrial and drug chemicals. One of the chemical uses is in the making of aluminum for airplane wings.

tract about 65 miles south of Kingman, Arizona. O. F. Marvin, chief field engineer for the corporation, is in charge of a crew of men who are constructing a new camp at the property preparatory to active development and operation. The old tunnels and drifts are also being cleaned out, timbers repaired, and track laid. The mine carries values in silver, lead, and copper.

It is understood that the Callahan Zinc-Lead Company, Joseph T. Hall, secretary, Box 229, Wallace, Idaho, has completed testing operations at the Duquesne property near Patagonia, Arizona, and is considering installation of a flotation plant. The company obtained a lease on the property, which comprises about 70 claims, early in 1939, and has been conducting an extensive diamond drilling campaign to determine the extent and grade of ore occurrences disclosed by former workings and indicated by geological conditions.



Harry Robinson, Box 23, Goodsprings, Nevada, is operating under lease the Stonewall Jackson mine in the Clark Mountain mining district of San Bernardino County, California. He is employing one man and is producing about 2,000 ounces of silver monthly.

The 250-ton cyanide plant of Roseclip Mines Company, Henry S. Sweet, general manager, Bodie, California, is operating at capacity, treating material from the old surface dumps. All material is mined from the old dumps at present by means of shovels and trucks. Underground work is contemplated next spring. Installation of a larger ball mill last July increased the plant's capacity about 75 tons per day. Operating officials include James McGavock, master mechanic; Henry von Klipstein, chief chemist; Frank Bettencourt, mining and crushing foreman; Henry Eckman, mill foreman; and William Bacon, chief clerk; all of Bodie. The company is a co-partnership composed of J. N. Rosekrans and H. W. Klipstein, both of 206 Sansome Street, San Francisco, California.

The Argonaut Mining Company, Ltd., Alex F. Ross, superintendent, Jackson, California, reported for the quarter ended September 30, 1939, a net profit of \$40,771 before depletion, depreciation, or income taxes. The improved showing over the two preceding quarters is reported to have been largely due to ore with a higher gold content. Profit for the first six months, before depreciation, depletion, or income taxes, amounted to \$8,077. Comparative results for 1938 are not available, as the company's properties were shut down early last year as a result of a fire in the underground workings. For the third quarter, receipts per ton of ore averaged \$8.98, compared with \$7.54 in the preceding quarter and \$7.55 in the first quarter. Costs increased in smaller proportion, amounting to \$7.86 per ton in the first quarter as against \$7.99 in the third period. For the nine months ended September 30 the company reported a profit of \$48,847 before provision for depletion, depreciation, and

federal income taxes, compared with a loss of \$99,660 in the like period of 1938.

The Sacchi-Spellenberg mine at Forks of Salmon, California, is operating on a 24-hour basis with a crew of 11 men employed. The dredge has been moved from the river to a bar about 25 feet above the stream. The property is operated by P. C. Sacchi and E. L. Spellenberg, both of Arcata, California.

The Indian Mining Corporation, Wasco, California, is reported to have exposed an important deposit of high-grade tungsten ore on a lease recently acquired on an easterly extension of the Eclipse property, which the corporation is operating. Mill tests on the ore are said to have proven very satisfactory and plans are now under way for active production. It is planned to use a power shovel in handling the ore body, which is readily accessible. A good road has been constructed to the workings. A crew of six men has been employed for some time in pushing development on the tungsten property and on the Eclipse mine. The latter carries values in lead and silver. Installation of a milling plant is under way at the Eclipse mine and officials of the company are now investigating special equipment to be added for the handling of the tungsten. Results of drifting in the Eclipse are said to be gratifying and the face of the tunnel is understood to show about 12 inches of satisfactory ore. The Indian Mining Corporation is composed of Paul Appley, president; Jake Camenisch, vice-president; Earl Ifland, secretary; and H. L. Ifland, treasurer; all of Wasco.

It is understood that the milling plant of the U. S. Vanadium Corporation, Bishop, California, at present handling from 225 to 250 tons of ore daily, is to be enlarged to handle an additional 100 tons per day. A tunnel, the portal of which is about 500 feet above the mill, is to be eventually extended entirely through the mountain to Pine Creek Canyon to the south. Ore will be transported from the portal to the mill by an aerial tramway and tailings will be discharged into a depression a sufficient distance from the creek to prevent stream pollution. The entire tunnel is expected to produce ore of milling grade. Electric power is furnished by the Nevada-California Company, and a modern camp has been constructed at the mine, which is

AVERAGE PRICES OF METALS
(Figures by American Metal Market)

	Copper Per Lb. Conn. Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	18.024	8.097	6.244	66.781
1925	14.042	9.020	7.622	69.065
1926	13.795	8.417	7.337	62.107
1927	12.920	6.755	6.242	56.570
1928	14.670	6.305	6.027	58.176
1929	18.107	6.883	6.512	52.993
1930	12.932	5.517	4.556	38.154
1931	8.359	4.244	3.638	28.701
1932	5.792	3.181	2.881	27.892
1933	7.276	3.870	4.031	34.723
1934	8.658	3.8596	4.162	47.973
1935	8.880	4.0648	4.331	64.273
1936	9.710	4.7091	4.903	46.088
1937	13.891	6.0085	6.517	44.805
1938	10.225	4.7388	4.813	43.222
1938				
Jan.	10.425	4.870	5.00	44.714
Feb.	10.00	4.8318	4.816	44.75
Mar.	10.00	4.50	4.418	44.448
Apr.	10.00	4.50	4.155	42.75
May	9.60	4.40	4.048	42.75
June	9.00	4.1481	4.143	42.75
July	9.810	4.882	4.75	42.75
Aug.	10.125	4.90	4.75	42.75
Sept.	10.255	5.00	4.855	42.75
Oct.	10.981	5.10	5.015	42.75
Nov.	11.25	5.0913	4.918	42.75
Dec.	11.25	4.8423	4.50	42.75
Ave. 1938	10.225	4.7388	4.613	43.222
1939				
Jan.	11.25	4.826	4.676	42.75
Feb.	11.25	4.8045	4.50	42.75
Mar.	11.25	4.8241	4.50	42.75
Apr.	10.489	4.782	4.50	42.75
May	10.058	4.75	4.50	42.75
June	10.00	4.80	4.50	41.955
July	10.220	4.854	4.517	34.044
Aug.	10.491	5.0426	4.724	35.951
Sept.	11.930	5.454	6.150	36.956
Oct.	12.442	5.50	6.50	35.726

"Doing a great job in the mining industry"

... these words of praise come from mining men everywhere

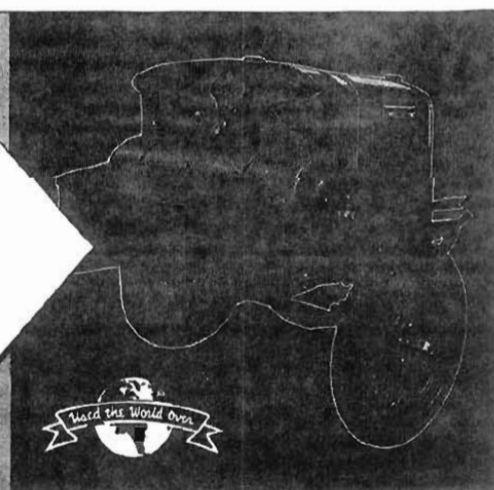
THE SMITH PORTABLE AIR COMPRESSOR

Priced at **LESS THAN HALF** the cost of standard compressors of equal capacity. The Smith Motor Compressor is being used throughout the Western States, Alaska, Canada, Mexico, South America, South Africa, and other countries wherever small mines are being operated. It will operate any of the medium weight rock drills to a depth of ten or twelve feet. It is the ideal machine for prospecting and test hole drilling because of its light weight and portability. Even though you have large stationary and portable compressors, you still need a Smith Motor Compressor for these jobs. It uses only one gallon of gasoline an hour, and repair parts are available at your nearest Ford dealer.

With a Ford Motor and shop facilities you can assemble your own compressor. We will furnish a Smith Compressor Head and Accessories with instructions for mounting.

Write **TODAY** for complete information!

GORDON SMITH & CO. 445 College St., Bowling Green, Ky.
Incorporated



located at an elevation of 11,500 feet. M. N. Shaw is superintendent at the Bishop property and a crew of 110 men is employed.

The **Dakins Company**, operating a dredge on Deer Creek below Nevada City, California, has changed its name to the **Yuba Gold Recovery Syndicate**. Robert D. MacAfee, Jr., Nevada City, is superintendent. Recent improvements made in the dredge plant increased its capacity from 1,000 cubic yards to 1,500 cubic yards per 20-hour day.

Installation of a new furnace is planned at the **New North Almaden** quicksilver mine, Edenvale, California, by William R. Biaggi, owner, 17 Grant Building, San Jose, California. Fifty feet of new crosscut tunnel have been completed in low-grade ore and a 280-foot prospect tunnel has also opened up a low-grade ore body with some high-grade in limerock. The present 50-foot tunnel will be driven another 50 feet with a view to opening up what is said to be a rich ore body. At present about two tons of ore are treated daily in the small plant located at the property. Natural gas is used in operation of the plant. Lewis I. Buck, Monrovia, California, is chief geologist for the mine, and E. J. Finley, San Jose, is chief field engineer. Two men are employed at the property.

The **Reed Gulch** property near Randsburg, California, is being operated by P. G. Chamberlain. A power shovel has been in operation for several months on the placer ground, dumping to a platform, from which the bank-run gravel is sluiced. Water is supplied from a well in Goler Gulch. Between 15 and 50 yards of gravel are run daily, depending upon the water, which is limited. Steps are being taken to increase the supply in order that operations may be stepped up. Recovery is said to average more than \$1 a yard, the bulk of which is in coarse gold.

The **Crestline Mining Company**, with headquarters at Summit, San Bernardino County, California, has recently purchased pipe, a Caterpillar engine, pulleys, and incidental mining equipment for use at its property. The company is composed of three partners, G. Gaye, H. Hamlin, and J. Geddes.

Construction of a 100-ton mill has been completed at the old Simpson gold mine, Leevining, California, by the **Log Cabin Mines Company**. Electric power has been extended to the camp and arrangements made for steady operations throughout the winter. The mine is credited with containing a large quantity of ore sampling \$15 to \$20 per ton.

The **Goldfield Consolidated Mines Company**, E. A. Julian, vice-president and general manager, 421 Crocker First National Bank Building, San Francisco, has optioned placers along the Trinity River below Weaverville, California, and the **Goldfield Trinity Placers**, a subsidiary corporation, has been incorporated under the laws of Nevada to explore the holdings. Large-scale operations are planned if tests prove satisfactory. Goldfield Consolidated also holds options on extensive placer deposits in Nevada and Placer counties where com-

pletion of the Narrows debris dam next year will permit resumption of extensive hydraulic mining operations. George Wingfield, Box 2520, Reno, Nevada, is president of Goldfield Consolidated.

The **Sierra-Kern Syndicate**, gold placer operators, A. J. Clapham, trustee and engineer, Box 565, Bakersfield, California, is placing equipment on property along the Kern River and work will be resumed at that point immediately. Work on the Pasco Ranch property in the Poso Creek district has been suspended temporarily due to the condition of the roads into the area during the rainy season. Excessive underground water was encountered in testing operations at the Pasco Ranch and the pumping equipment was inadequate to handle it. The

syndicate operates from open pits; the gravel is run through a trommel and screens; and recovery is made by means of concentrating tables. The plant has a capacity of 50 yards daily. Four men are employed.

Work is on a two-shift basis and 10 men are employed at the **Gold Hill** mine, Big Bear Lake, California, which was recently taken over by Leo Morrison, 204 South Beverly Drive, Beverly Hills, California, and associates. A ventilating system and a compressor have been installed, all housed for winter operation in the 500-foot tunnel. Cross-cutting to contact the open cut work on the east-west vein commenced about November 1, with a view to exposing additional high-grade ore. The mine is being

You'll Profit Best.

**WHEN ALL
OF YOUR MEN
ARE EQUIPPED
with**



**EDISON ELECTRIC
CAP LAMPS**

M·S·A SKULLGARDS

The greatest return of this equipment in reduced accident frequency, reduced compensation costs, increased efficiency of the men and better production, occurs when every man underground enjoys its protection. A single bad accident that could have been averted by the Edison Lamp's effective illumination or Skullgard's head protecting strength can wipe out much of the savings created by the proper safeguarding of other workers. We would be glad to prove the positive advantages of complete Edison Electric Cap Lamp and M.S.A. Skullgard coverage throughout your operations, upon request—without obligation.



MINE SAFETY APPLIANCES COMPANY
Braddock, Thomas and Meade Streets, Pittsburgh, Pa.
District Representatives in Principal Cities

operated by Leo Morrison, Inc., and Victor M. Stephenson, 6533 Hollywood Boulevard, Hollywood, California, has been named consulting and operating engineer. A. L. Rose is mine foreman at the property.

Approximately 200 acres of land south of Oroville, California, have been acquired by the Placer Development Company, Fred J. Bodinson, president, 1033 Pacific Street, Alameda, California, and preparations are being made for installation of a \$110,000 dragline dredge to work the ground. It is estimated that four years will be required for the work.

European war conditions are said to have increased the demand for domestic potash to such a degree as to warrant increased production at the property of the American Potash and Chemical Corporation, Trona, California. The company recently placed in effect a 40-hour week and wage increases, ranging from 8 to 20 per cent, which affected approximately 900 men. The decrease in the work week has resulted also in the employment of about 120 additional men. Heavy shipments of potash have been made by the company in recent weeks and buying orders are expected to exhaust a huge surplus stock. The plant is understood to be preparing to operate at full capacity. A. A. Hoffman, Trona, is California manager. The company acquired 5,969 acres of potash-bearing land in the Searles Lake district at the recent government auction of potash leases. The balance of the 6,340 acres offered for lease went to the West End Chemical Company.

Work is to begin at once on deepening of the 100-foot, two-compartment shaft at the Epley mine near Placerville, California, which is being developed under the direction of L. F. S. Holland, Placerville. The mine has been equipped with a 25-horsepower hoist, 20-horsepower compressor, new power line, and complete mining machinery.

H. M. Goss is directing a crew of men in sampling operations at the Johnson property near Coloma, California, in the interest of Santa Barbara capital. It is understood that if results are satisfactory, the group will consider installation of a mill at an early date.

Domingo Rolleri of Angels Camp, California, has entered into an agreement for

purchase of the Big Springs quartz mine located about 1½ miles south of Angels Camp. The purchase price is \$35,000.

The Pine Log mine, owned by Frank S. and Effie M. Tower, Milton, California, has been taken over on a five-year lease by Will Halloran. Terms of the lease call for a 10-per cent royalty.

Clyde Shand of the Stockton Mill and Wrecking Company, Stockton, California, has encountered a gold ledge on property which he has been prospecting in the Bowers Cave district, and he is considering plans for installation of a small pilot mill.

A. R. Trout has secured a bond and lease on the Magruder and Scorpion mines in the Sawmill Flat district near Columbia, California, owned by Miss Marian Page. He plans early development of the property.

The amalgamation-gravity concentration plant at the Mormon Hill mine near Rescue, California, is treating about 15 tons of gold ore daily. The 130-foot inclined shaft is to be deepened and drifting is planned. Work will also be continued on extension of the 1,500-foot tunnel. A crew of nine men is employed under the direction of Leslie Hall, mine and mill superintendent, Rescue. The property is operated by the Warwin Mining Company, Inc., Harry C. Kaufman, president, 2020 Sacramento Street, Los Angeles, California.

The Porphyry mine at Gold Run, California, owned by L. G. Merrithew of Gold Run, has been leased by C. L. Hutchinson of Menlo Park and a group of Los Angeles associates. Mining operations are to begin at once under the direction of Clarence Clark, superintendent, Dutch Flat, California. It is understood that a power shovel and a 250-ton ball mill are planned for the property.

The Buckboard mine south of Randsburg, California, has been reopened by Bill Wilkinson, Cal Williams, and Rusty Horgan, who have secured a lease on the property from Albert Ancker of Tehachapi, Califor-

nia. They have also leased the Baltic mill from Ancker and the plant will be placed in operation at once. It is understood that the 10-stamp mill is in good condition. The amalgamation process is used for the recovery of values. The mill is also equipped for cyaniding, but the cyanide plant is not expected to be put in operation until a later date.

Pumps have been pulled from the 800 to the 400-foot level at the Black Oak mine, Garden Valley, California, and ore is now being drawn from the upper levels. The mine is worked through a 180-foot shaft, from which a winze extends to the 600-foot level. Another winze from the 600-foot level reaches the 800-foot mark. Exploration and development work is in progress at the William Poor property now known as the Golden Oak mine north of Kelsey, which was taken over under lease in September. Since that time, two shafts have been retimbered and deepened, and at present a crosscut is being run on the 52-foot level. Water, which has always proved to be a serious handicap in previous attempts to operate the property, is being handled by two sponge pumps. Equipment formerly used in prospecting work at the Spanish Oak mine has been moved to the Golden Oak. Russell J. Wilson, Garden Valley, operates both properties.

Extensive development is under way at the Bear Track mine on Slate Mountain 20 miles northeast of Placerville, California. The mine was purchased recently by C. N. Bagwell, N. D. Larsen, and P. F. Shaw. It was formerly owned by Howard Culleds and Ernest Fields of El Dorado, California. Construction of a milling plant, blacksmith shop, and other necessary buildings is under way. Equipment for a 20-ton ball mill, air compressors, and other machinery have been delivered at the mine and active operations are expected to be under way by the end of November. The mine is said to carry a 2½-foot vein. Present development consists of a 300-foot tunnel, but upon completion of the mill, exploration shafts will be sunk and other work done. Pockets are said to occur frequently in the main vein.

Stewart and James Fraser of Randsburg, California, are installing a 30-ton amalgamation plant at the Little Butte property near Johannesburg, California. The new plant includes a 30-ton Lane Chilean mill. The mine is under lease from the Little



New High Efficiency
5-inch WILFLEY PUMP

A. R. WILFLEY & SONS, Inc.
DENVER, COLORADO
New York Office: 1775 Broadway, New York, N. Y.

More Efficiency
means **Lower Costs**

A completely new standard of EFFICIENCY is created by the new 5-inch WILFLEY pump illustrated at left. Like ALL Wilfleys, this pump will deliver a highly efficient, continuous performance, 24 hours a day without attention. It eliminates costly delays caused by shutdowns. It's the pump to buy if you want to reduce COSTS. Write for complete details.

WILFLEY
centrifugal SAND PUMPS

Butte Mining and Milling Company, E. L. Riggs, owner. There is said to be sufficient ore in sight to keep the mill busy while new development work progresses. It is planned to have milling operations under way before the first of the year.

The shaft at the Nancy Hanks mine near Randsburg, California, is down to the 120-foot mark and a crosscut has been started. A ledge was encountered in the crosscut and drifting is now in progress to determine its extent. The property is under lease to Jack Rogers of Los Angeles.

Three shifts are employed in driving a long tunnel at the Golden Dawn property in the Selby Flat district north of Nevada City, California. The tunnel is being driven with a view to locating an old channel which produced gold in the early days. The claims included in the property are the Golden Poppy, Fort Washington, and Mountain Side. William Newton is in charge of operations and six men are employed. The ground is owned by Mrs. Catherine Cooper.

The Rim Cam Gold Dredging Company is operating a one-yard shovel on gravel above the Blue Jay mine near Jackson, California. The gravel, which is owned by Frank Grecco, is running about 40 cents a yard. There are about 1 1/4 miles of creek bed available for working. Dr. Charles Brockman, Jackson, is associated with C. E. and A. E. Rimmer and Jack Cameron in the operation of the property.

Wesley W. Webster has purchased a new 25-ton plant which is being moved to his Clear Creek quicksilver mine at Hernandez, California. It will be several months before the plant is in production.

The new concentrating plant at the Aetna quicksilver mine, Aetna Springs, California, has been completed and test runs are reported to have been satisfactory. It is expected that the new addition to the present furnace equipment will permit the handling of more than 500 tons of material daily. C. W. Erickson, Aetna Springs, is general superintendent at the mine.

Operations are on a three-shift basis at the property of the Bishop Tungsten Company, Bishop, California, and tonnages of available ore are expected to be more than doubled by development work. A. T. Wilkerson is directing operations at Bishop, for the partnership, which is composed of Wilkerson, Ralph H. Moore, and F. M. Breslin.

A cyanide plant in operation at the Old Rose gold mine near Big Bear Lake, California, is treating 75 tons of tailings daily at the present time, with a crew of 10 men employed. D. Chase Rich, 639 South Spring Street, Los Angeles, California, operator of the property, plans to have the mine under development during the winter, and if tests prove satisfactory, installation of a flotation mill is proposed. William Grassman is in charge of the cyanide plant. John Daniell is engineer in charge at the mine and will direct development and new mill construction.

The Yreka Gold Dredging Company, Erick Peterson, general superintendent, Yreka, California, is handling approximately 130,000 cubic yards of gravel monthly.

The company is employing 20 men. Etheredge Walker, 351 California Street, San Francisco, heads the organization.

Sinking of the shaft from the 550 to the 1,100-foot level at the Zeibright mine of the Empire Star Mines Company, Ltd., Grass Valley, California, is progressing rapidly and a station is being cut at the 850-foot level. Production will soon be stepped up to slightly more than 1,000 tons per day with a peak capacity of 1,100 tons daily. At the present time the mine produces around 24,000 tons of mill ore monthly. Ore values maintain a steady average with little or no increase or decrease in values on the lower levels, according to Robert J. Hendricks, manager, Nevada City, California. Production on a

large scale is necessary because the ore is low-grade, and mechanical equipment is used underground to increase the daily production of ore per man over that produced in other mines in the district. Two new surface structures are under way at the Zeibright, a two-story, 46-room hotel with provisions for a lobby, service rooms, and club room; and a new dry house capable of serving the mine's 175-man crew.

The Fourth of July and Andy Johnson quicksilver properties near Hernandez, California, are to be placed on a production basis next spring by W. C. Webster, Box 64, Mendota, California, and associates. Webster, who has a 10-year lease on the properties, will begin installation of equipment this winter, including a rotary

You can't go
wrong when you buy
your Gas or Electric Welding
and Cutting Equipments
from
VICTOR

ANY ONE OF OUR NUMEROUS CATALOGS MAILED ON REQUEST
WRITE TO VICTOR EQUIPMENT COMPANY,

844-850 FOLSOM ST.
SAN FRANCISCO



3821 SANTA FE AVE.
LOS ANGELES

220 South Fifth Ave., PHOENIX

furnace, a compressor and drill, and a crusher. Plant buildings and bunk houses to accommodate the 20-man crew will also be set up during the winter season. The first step in reconditioning of the property will be construction of a three-mile road to the mine. A second furnace will be installed when production is started in March or April, and 20 tons of ore will be handled daily. Operations will be carried on chiefly from an open pit in which Webster has been doing development work for the past six years, but a tunnel is also being driven to undercut the present workings, which are badly caved.

The **Santa Fe Gold Mines, Inc.**, Victorville, California, recently poured the first gold brick for shipment to the mint. The brick is valued at approximately \$10,000. The company operates a 600-ton, sand-leaching cyanide plant in Blackhawk Canyon 35 miles southeast of Victorville. A crew of 100 men is employed. Harlan H. Bradt, 234 East Colorado Street, Pasadena, California, is managing engineer. Work at the mine is directed by James I. Moore, Jr., general superintendent, and other operating officials include H. H. Cunningham, mine foreman; James B. Steed, master mechanic; E. A. Hassan, Jr., chief engineer; and Algernon Del Mar, consulting metallurgist.

Kenneth R. Lynch, 2365 Vallejo, San Francisco, California, has acquired a lease and option on four claims of the **Breen quicksilver group** located near Hernandez, California, with the purchase price set at \$60,000, payable on or before 10 years from date of the lease. At least four men must be kept regularly employed at the mines after December 1, 1939, according to the terms of the lease. The claims covered by the agreement are the Don Miguel, Don Juan, New York, and Pennsylvania. The Breen group is owned by William A., Mary Josephine, and J. Edwin Breen, all of King City, California; Harry A. Breen of Hollister, California; and Mrs. Grace Feder of Alameda, California.

The **Universal Dredging Company**, L. D. Carlson, secretary, 729 Forum Building, Sacramento, California, has leased the Ludwig Netz property in the Quaker Hill district near Nevada City, and the gravel is being tested for gold content. If the tests prove satisfactory, it is planned to install

a dredge and other equipment to work the ground.

Luther Hickox, Somesbar, California, is moving new machinery to his **Ten Eyck placer mine** near Somesbar. The mine has a record of steady production for more than 50 years.

The **Billie Martin** homestead and five adjoining placer claims have been purchased from Ed Clark, Happy Camp, California, by C. J. Phillips, 1016 San Antonio Avenue, Alameda, California. The property totals approximately 200 acres and is located 2½ miles below Happy Camp. Ditches have been repaired to carry water to the ground from Benjamin Creek.



The **Colorado Fuel and Iron Corporation** and subsidiaries report for the quarter ended September 30, 1939, a net profit of \$231,282 or 41 cents a share. This compares with a net loss of \$143,752 in the like period of 1938. W. A. Maxwell, Jr., Continental Oil Building, Denver, Colorado, is president.

John S. Anderson of Independence, Colorado, is reported to have leased the **Star of Bethlehem** property from the **Stratton Cripple Creek Mining and Development Company**. A new headframe has been installed with a 15-horsepower electric hoist. The mine is on Bull Hill between the American Eagles and Acacia properties. J. O. B. Keener, Box 146, Cripple Creek, is general superintendent of the Stratton interests.

For the third quarter of 1939, the **Climax Molybdenum Company** is reported to have a net profit of \$3,094,540, equal to \$1.23 a common share. This compares with \$1,311,690 or 52 cents a common share in the preceding quarter and \$2,200,350 or 87 cents in the September quarter of 1938. Operations are at Climax, Colorado, and the western office is in the Continental Oil Building, Denver. William J. Coulter is general superintendent. An extra dividend of \$1 a share has been announced by the company, payable November 10, 1939,

to stockholders of record November 3. This is dividend No. 10 and amounts to \$2,520,000. Payments of 30 cents a share were made in March, June, and September of the current year. An announcement has been made of a 50-cent daily raise in wages of non-salaried employes and a six-day vacation for those who have worked a certain number of weeks. Eight hours is a day's work and 48 hours is a week's work. Overtime is paid for time over eight hours in a day or over 42 hours in a week.

The **San Juan Gold King Mine, Inc.**, has been organized by Earl F. Crowl of Lawton, Iowa, and associates to operate the Gold King mine eight miles northwest of Silverton, Colorado, which they acquired under lease this fall. Offices of the new company have been established in the Midland Savings Building, Denver. Officials are: Crowl, president; Lisle Hobbs of Moline, Iowa, vice-president; and G. I. Lore, secretary-treasurer. If weather permits preliminary development work will be started this winter and more extensive operations will be undertaken in the spring.

Growing activity is reported in the northwest corner of Park County, Colorado, serviced by the post office of Olava. Vernon L. Crow is developing a four-foot vein showing values in gold, silver, and copper in his **Gray Wolf** mine on Handcart Creek. Crow has been working for the past six months and the ore was opened in a 128-foot tunnel at a depth of about 90 feet. No work is done during the winter as the property is near timberline. John D. Francis and Gladwin Tracy have developed milling ore in their property in Hall Valley about four miles from the Gray Wolf claims. On the same vein system, but about one mile away, Ole Howard and Tony Karagoff are said to have an eight-foot vein. The **Twin Basin Mining and Milling Company** recently completed installation of a small mill in the Geneva district near Olava. Jack Friend, also working in this area, is developing a silver property.

R. H. Bailey, engineer, 414 Lloyd Building, Seattle, Washington, is reported to have acquired the interest of Mrs. Hattie E. Lawson and J. Edward Lawson in the **Klondike and Golden Wonder** groups of claims in San Miguel County near Tellu-

NATIONAL CARBIDE

MINE LAMP CARBIDE for Miners' Lamps is sold from "Coast to Coast"

Distributed by

Acetylene Service Company, Denver, Colorado
Air Reduction Sales Company, Emeryville, Los Angeles, Sacramento, California; Portland, Oregon; Seattle, Spokane, Washington
Central Commercial Company, Kingman, Arizona
Denver Oxygen Company, Denver, Colorado

Elko Motor Supply Company, Elko, Nevada
Magnolia Airco Gas Products Co., El Paso, Texas
Montana Powder Company, Helena, Montana
Pratt-Gilbert Hardware Co., Phoenix & Tucson, Ariz.
Reno Motor Supply Company, Reno, Nevada
Stockton Transfer Company, Stockton, California
Terminal Warehouse Company, Fresno, California
Whitmore Oxygen Company, Salt Lake City, Utah

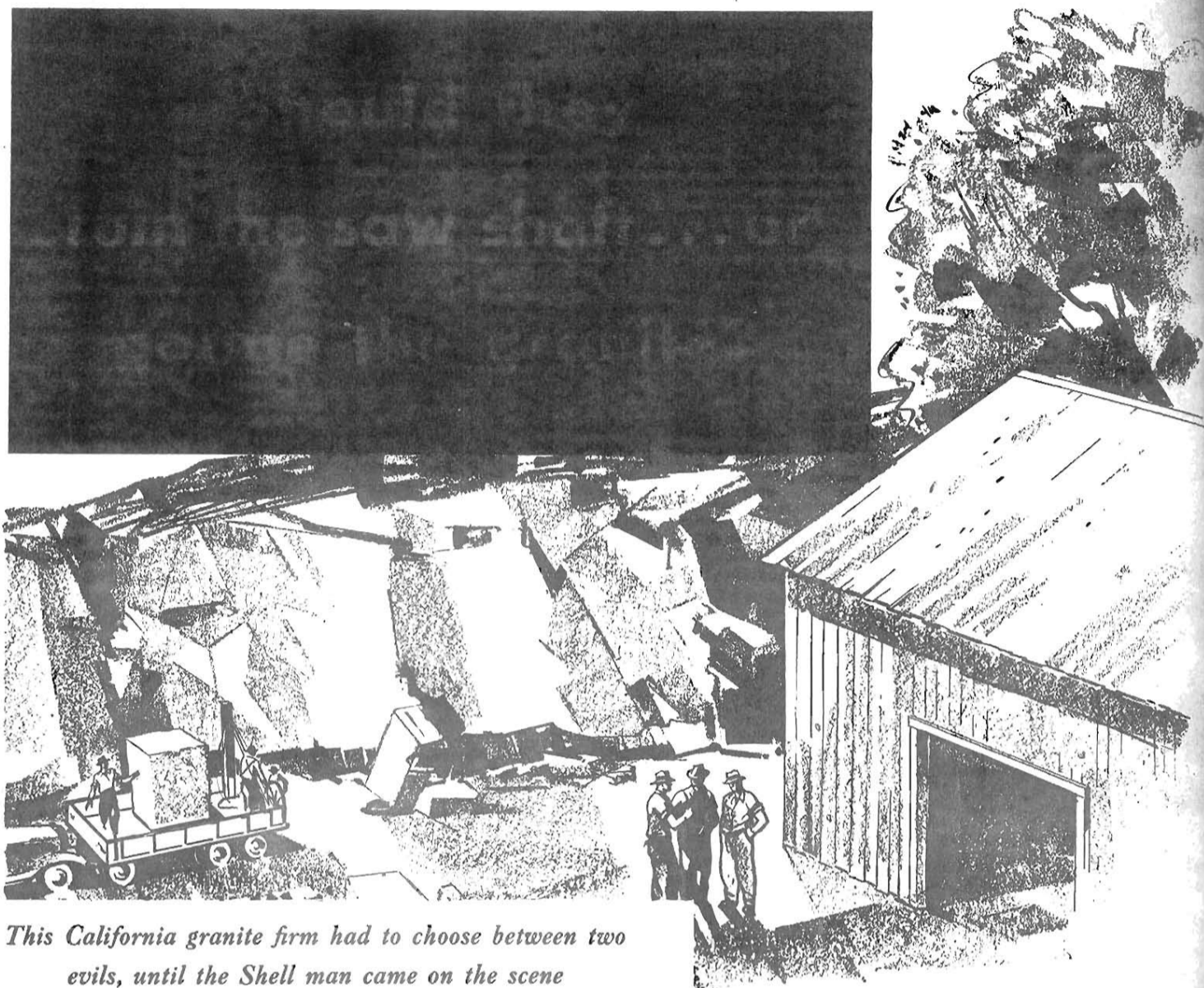
NATIONAL is uniform in quality. Free from dust and fines.
Evenly Sized. Cans especially sealed, eliminating Air Slack.
It Saves You Money.

Lincoln Bldg.,

NATIONAL CARBIDE CORPORATION

New York, N. Y.

11-15-39 inside cover



This California granite firm had to choose between two evils, until the Shell man came on the scene

After an hour or so of operation, lubricants in the Union Granite Company's granite saw would invariably give way to heat and friction . . . and start working out of the shaft.

By the time a granite block was cut through (a matter of 5 or 6 hours), shaft and rollers were starved for lubrication—the shaft was wearing. Two shafts, in fact, had to be replaced in a year's time.

Yet to hold up operations in the middle of a cut and re-lubricate was more expensive than buying new shafts, figured Union. Because the minute you stopped a saw of this type, granite dust and the steel shot used to reduce friction would settle in the cut. And the stone would be badly gouged when operations were resumed.

So it was starve the saw shaft or gouge the granite—till the Shell man called.

He recommended a Shell lubricant that had proven highly stable under similar conditions of heat and friction. The switch in lubricants was made.

Today, Union's problem is licked. Their saw is properly lubricated *during the entire cutting operation*. Shaft and rollers no longer show noticeable wear.

As in this case, so in hundreds of others throughout the West, Shell men and Shell products are helping mining operators solve their *tough* lubricating problems. If you have a "sticker" on your hands, call nearest Shell office. Or write Industrial Lubricants Division, Shell Building, San Francisco.



SHELL MINE LUBRICANTS

ENGINEERED FOR YOUR 4 BASIC OPERATIONS:

**POWER
DEVELOPMENT**

**SPEED
CHANGING**

**POWER
DISTRIBUTION**

**POWER
OFFTAKE**

The Sampling Mill by Fisher Lane



* * * The jumping fitters which Germany is experiencing is manifest by an article on STRATEGIC WAR METALS which appeared in a recent issue of *Wochenblatt* (meaning *Weekly-Sheet*) in Berlin. The article states: "Possibilities of obtaining from Russia other important metals (than iron) such as copper, zinc, lead, nickel, antimony, tin, tungsten, manganese . . . are limited if not ruled out completely."

* * * Hitler needs copper for rifle and artillery cartridge and shell cases. Somewhere in my basement, I have a 1918 World War souvenir which is eloquent of that need. It's a 77-millimeter German shell case manufactured in mid-1918 of pressed sheet steel, the only brass and copper in it being the percussion primer (dented—the shell was fired, on the bloody Chemin-des-Dames near Rheims) and a quarter-inch ring of brass surrounding it, pressed into a shouldered hole in the steel butt of the case. I brought that shell home to show the tragic efficiency of starvation tactics in winning a major war. The allies are using that same strategy now; and the Germans, having found that Stalin's promising "alliance" is fustian and gas in equal parts, and that Russia's "strategic metals" are mostly in the short-ration class—excepting manganese, are in a whale of a dither about it. Somebody's pen slipped—and the *Wochenblatt* article has spilled *los frijoles*, thus early in the starvation campaign.

* * * I re-spill them here just to give you Yank producers and potential producers something to think about, in the lurid light of recent *Mining Journal* articles on strategic metals (accent on manganese) and comment thereon in this column.

* * * On our side of the Atlantic, copper producers are in a dither of their own over the move of distinguished, well-meaning but at times woefully misinformed Secretary Cordell Hull to set up one of his pet brainchild trade agreements with Chile. Eleven big American copper producers, the Arizona Copper Tariff Board, members of Congress, and other opponents of copper-tariff slashing hurriedly hopped into Hull's hair with assorted briefs setting forth multifarious reasons why our own copper industry rates protection rather than throttling—especially with hell a-popping all over the Eastern Hemisphere. Forgive the pun, but the Hull damn' situation, to them, is describable in the chaste, euphonious, aromatic phrase immortalized on the motion picture screen by one Mischa Auer . . . to wit: EET STEENKS!

* * * Lead miners can perk up a bit! Charlie Edison, acting secretary of the navy, has disciplined certain construction admirals because new submarines proved topheavy. Result, heavy lead ballast has to be bolted to their keels to keep them top-side up in heavy weather.

* * * Tears from San Francisco! Hauling down the flag atop the old Mint Building, where billions of western gold has been smacked into legal tender. Dust, grime, and cobwebs on windows and front of old San Francisco Mining Exchange Building, once a lively center of penny-a-share mine gambling!

Kennecott Copper Company, Keno Hill, Ltd., the Minerec Corporation, Pacific Tin Corporation, Braden Copper Company, and the New River Collieries Company.

His philanthropies included donations to the Mount Sinai Hospital in New York, establishment of a free dental clinic in New York, a students' dormitory in Paris, greenhouses in the Botanical Gardens, and the financing of free band concerts in New York. In his will, a trust of \$5,000,000 was left to the Murry and Leonie Guggenheim Foundation, which was established in 1929 for the purpose of conducting the various charitable and benevolent activities on an organized basis. The income from the trust will be used to erect and operate clinics for Manhattan children.

DR. WALDEMAR LINDGREN

DR. WALDEMAR LINDGREN, head of the geology department at the Massachusetts Institute of Technology for the past 21 years, died November 3 at his home in Boston. He had been professor emeritus for the past six years, previously holding the famed William Barton Rogers seat as professor of economic geology.

Born in Sweden, Dr. Lindgren received his education there and in Germany, and he came to the United States in 1884 as assistant geologist of the U. S. Geological Survey. For many years he was chief geologist for the United States government, lecturing and writing voluminously.

He was a former president of the Geological Society of America and he was signally honored eight years ago when 800 American engineers made him an honorary member of the American Institute of Mining and Metallurgical Engineers. Two years ago he was awarded the Wollaston medal by the London Geological Society for his work in mineralogy. The Lindgren Library at M. I. T. was named in his honor.

His memberships also included the Mining and Metallurgical Society, the National Academy of Science, and the American Association for the Advancement of Science. He was the author of "Mineral Deposits," a universal textbook used by students of mineralogy.

Dr. James B. Conant, president of Harvard, recently said of him: "He is a geologist to whom all men turn for knowledge of metallic secrets hidden within the rock."

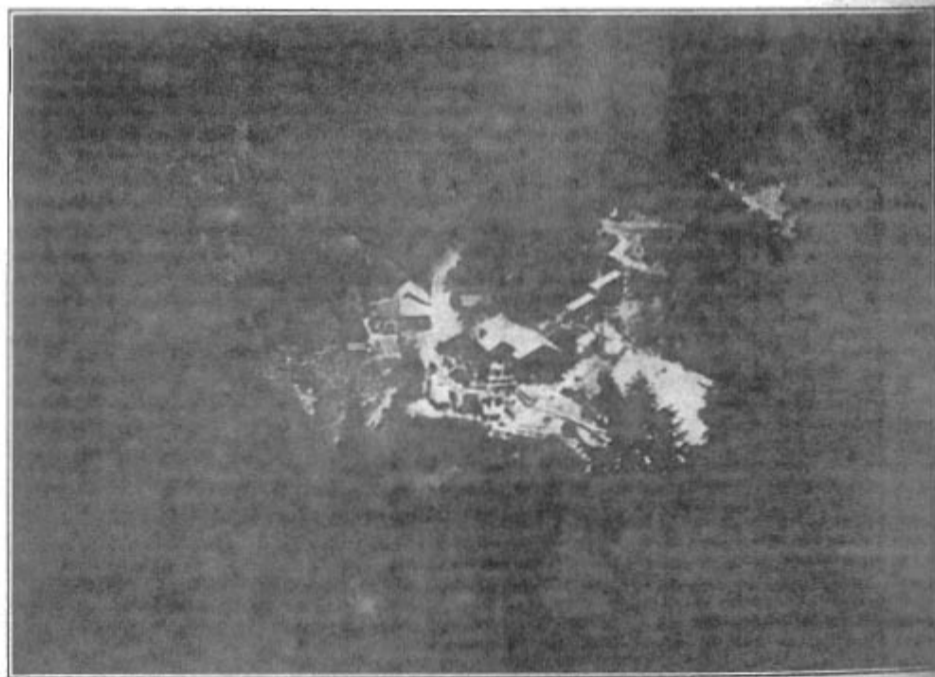
EXTENSIVE WORK PLANNED FOR BENTON MINE IN OREGON

MUCH activity is reported from the Benton mine in Josephine County near Grants Pass, Oregon. The new road, built in the Siskiyou National Forest by the CCC last summer, will make possible trucking to and from the property all the year around. Heretofore, pack trains were used during the winter months.

A diamond-drill outfit, operated by compressed air, was purchased recently and will be handled by an experienced man until one of the present employees can be trained in its use. A prospecting program for the entire property is planned.

During recent months production has averaged about 45 tons of ore a day. Early in October the mill was shut down for a few days while the ball mill was relined and maintenance work done on the Diesel engines. All power for mine and mill is furnished by Diesels, a 140-horsepower Atlas-Imperial, V-belt connected to a 60-cycle generator for the mill and a 120-horsepower Fairbanks-Morse, belt-connected to an Ingersoll-Rand Type 10 compressor for the mine. A small machine is used as a standby.

About 30 men are usually employed at the property under the general management of Edward L. Stenger of Grants Pass. Elton A. Youngberg, Grants Pass, is mill superintendent.



General view of the Benton mill and camp in Josephine County, Oregon. An extensive prospecting program will be conducted this winter.

**INSPIRATION CONSOLIDATED
PROPOSES BOND ISSUE**

THE Inspiration Consolidated Copper Company, Inspiration, Arizona, has filed a registration statement with the SEC covering \$5,910,000 of 4 per cent, convertible first mortgage bonds, due April 1, 1952, and 295,500 shares of capital stock, \$20 par value, to be reserved for conversion of the bonds.

Holders of the company's outstanding shares of capital stock will be given the right to subscribe pro rata to the bonds at a price to be announced later, and bonds not subscribed by stockholders will be purchased by underwriters and may be offered publicly. Blythe and Company, Inc., of New York City will be the principal underwriter.

In its registration statement, the company reported net income, without allowance for depletion, of \$255,378 for the first nine months of this year, compared with net loss of \$324,615 for the full year 1938. Net proceeds from the sale of the bonds, together with other funds, will be used to pay promissory notes aggregating \$7,000,000, of which Guaranty Trust Company of New York holds \$2,000,000; the National City Bank of New York, \$2,000,000; the Chase National Bank of New York, \$1,000,000; and Anaconda Copper Mining Company, \$2,000,000.

**PERTH AMBOY AND NEWARK PLANTS
OF A. S. & R. RESUME OPERATIONS**

OPERATIONS at the Perth Amboy copper and lead refinery of American Smelting & Refining Company have been resumed following the settlement of the strike called on October 10 by the C. I. O. affiliate, International Union of Mine, Mill and Smelter Workers. A contract was signed with this union on virtually the same basis as the contract which expired in July. Minimum wage will remain at \$5 a day.

Suspension of operations at this plant for a little more than a month has had an influence on the delivery of lead and copper, and with respect to the latter metal the resumption of operations is expected to alleviate somewhat the tightness in spot and nearby position currently prevailing.

At the same time it was stated that the strike at the Newark plant of the Federated Metal division of the American Smelting & Refining company also has been settled and operations resumed. This settlement involved granting of an increase of 25 cents a day, bringing the basic wage rate up to \$5 a day for ordinary labor.

**NATOMAS REPORTS IMPROVED
THIRD QUARTER EARNINGS**

NATOMAS COMPANY, Thomas McCormack, president, Forum Building, Sacramento, California, reports a net profit of \$338,343 after depreciation, depletion, and provision for federal income tax, for the quarter ended September 30, 1939. This is equal to 34 cents a share on 975,750 shares of capital stock outstanding and compares with a net profit of \$318,523 in the previous quarter and \$257,388.

The improved showing in the third quarter is said to reflect operations in better ground and higher income from rental of agricultural acreage, due to improved prices of farm products. In the first quarter of this year, which reported a profit of \$243,483, two of the company's seven dredges were passing through tailings en route to new ground.

**NEW REFINING PROCESS IS
DEVELOPED FOR MANGANESE**

DR. R. S. DEAN, chief metallurgist of the U. S. Bureau of Mines, has announced that the government has perfected a process by which sufficient domestic manganese can be refined to make the United States self-sufficient in time of peace or war. The chief consumer of manganese in the United States is the machine tool industry, which obtains about 96 per cent of its supply from Russia at the present time.

According to Dr. Dean, the bureau of mines and the bureau of standards have developed an electrolytic refining process which produces a better grade of manganese, although at higher cost, than that obtained from manganese ore used in industries. He stated that the best manganese obtained from Russia is 96 per cent pure, while that produced by the electrolytic process is 99.93 per cent pure.

Several companies have licenses to produce the metal under the government patent. Dr. Dean stated that there are numerous manganese deposits in the United States, but the ore is principally low-grade.

**COPPER PRODUCTION
INCREASES IN MEXICO**

THOUGH copper production in Mexico continues to increase, there has been a sharp decrease in the output of all other metals and minerals, excepting a few of the minors, as is shown by the following figures from the ministry of national economy covering the first six months of this year and the same period of last year, amounts in kilograms:

Product	1939	1938
Gold	12,871	14,006
Silver	1,037,524	1,443,995
Copper	24,038,574	24,963,996
Lead	116,633,300	138,621,039
Zinc	79,502,723	81,802,769
Antimony	3,361,758	3,646,699
Graphite	5,660,252	5,300,072
Mercury	131,524	156,798
Arsenic	3,528,413	4,808,002
Molybdenum	405,980	415,665
Bismuth	53,860	101,697
Cadmium	402,150	359,109
Tin	104,962	131,604
Tungsten	49,963	10,893
Vanadium	107,779	68,341
Cobalt	2
Manganese	87,003



**MINES BUREAU PUBLISHES
MINERALS YEARBOOK, 1939**

IN "Minerals Yearbook, 1939," just published, the United States Bureau of Mines presents an economic review and statistical summary of the mineral industry of the United States in 1939. The volume reviews current trends in production, consumption, prices, stocks, technologic progress, world conditions, and international trade for nearly 100 metal and mineral commodities.

In response to the wide public interest in the problem of providing adequate supplies of minerals needed for national defense, the new Yearbook summarizes the domestic situation with respect to the more important strategic minerals that must be obtained in whole or in large part from foreign sources. Despite the costly experiences of the World War the industrial preparedness program of the United States still contains a weakness by reason of its failure to provide adequate supplies of our deficient minerals for use in time of stress, it is noted. While the situation in some commodities has improved since 1918, it has become more acute in others.

A new chapter of the Yearbook presents a comprehensive survey of the consumption of pig iron and iron and steel scrap.

The preliminary total value of mineral production in the United States in 1938, as reported to the bureau by producers, was \$4,354,000,000, a decrease of 20 per cent from \$5,413,600,000 in 1937. Metals, as a group, showed the sharpest decline—40 per cent—followed by mineral fuels, with a drop of over 12 per cent, and non-metals with nearly 12 per cent.

Despite drastic curtailment in production of virtually all important minerals, the record of the mineral industry in 1938 was better than that of business in general. The index of the Federal Reserve Board for minerals was 98, a drop of 15 per cent from 1937, whereas the combined index for all industry was 86, a drop of 22 per cent.

Gold was outstanding among the principal minerals, in that production in 1938 increased appreciably from 1937. Aluminum output was only 2 per cent below 1937, but copper, lead, and zinc dropped from a third to a fifth below 1937 levels and, largely as a result of smaller production of base metals, silver output also declined. The depressed condition of the steel industry was responsible for a drop of 61 per cent in iron ore production, and most of the other minerals used in steel manufacture—fluorspar, fluxing stone, coke, and alloying metals—showed similar declines. Molybdenum was the notable exception, for production again increased in 1938 although shipments were lower than in 1937.

In "Minerals Yearbook, 1939," the Bureau of Mines presents a complete official record of mineral production in the United States in 1938. The volume contains 1,447 pages with numerous charts and diagrams. It is distributed by the Superintendent of Documents, Government Printing Office, Washington, D. C., at a price of \$2 in the United States, Canada, and Mexico; \$2.50 in other foreign countries.

WILLIAM B. MCKINLAY* urges

Horse Sense in War-Metal Production

Supplementing the appeal of Addison N. Clark for horse sense in war-metal production, as published in *The Mining Journal* for October 30, the author offers a practical suggestion for consideration by the President, the Congress, and the People.

WE KNOW that our country has grown great and powerful because it has been the "land of the free and the home of the brave." Courageous spirits pushed westward, many of them inspired with the dream of gaining riches quickly by digging and blasting minerals from the earth and washing gravel deposits. Thank God, many were successful.

What if some were "roughnecks?" They had to be tough to survive. Had they been hampered by all the restrictions, legal intricacies, and tax burdens that discourage modern enterprise, they would have said, "Oh, Hell!" and kept their noses out of speculative undertakings.

Horse sense in war-metal production demands that during the next session Congress enact a new, clearly worded and simple law which will embody some or all of the following provisions:

1. Exemption from tax levies on all income derived from actual mining activities at newly discovered mines and prospects, and at rehabilitated old mines and prospects, in districts where production records and federal or state geological publications indicate a potential future production of minerals included in the official government lists of "strategic materials."

If it is legal and proper to suspend assessment work requirements on unpatented claims, it is still more equitable and just to suspend prohibitive taxes on income which otherwise would never exist. Any part of a horse should be able to deduct that the total net taxable income of the entire country should be greater as an indirect effect of the proposed law, thus increasing ultimate treasury revenues.

2. Exemption from unnecessary interference by the SEC in the raising of moderate amounts of capital, for development of war-metal (and mineral) mines and prospects, by the creation of the old-fashioned mining partnerships.

3. A clear statement that any income derived from trading in shares of such partnerships or of corporations shall not be exempt from income-tax levies.

4. Exemption from interference by the NLRB in conduct of operations at war-mineral mines and prospects, at least as pertains to exploration, development, and mining work at properties where 25 per

cent or more of the operatives have some share in the venture. That is to say, when a reasonable percentage of prospectors, miners, laborers, mill men, or other such workers, voluntarily choose to work on a basis of part cash and merchandise and part ownership in the venture, John L. Lewis and all his ilk must keep hands off.

5. As a feasible and possible rider in the bill, some provision should be made for a small-scale tryout of a plan for permitting prospectors and prospect owners to file descriptive matter and solicitations for financing, for broadcasting information by bulletins or otherwise, where such applications ultimately may reach citizens who desire to "take a chance" in a modest way with reasonable assurance that their money will be put to work at prospecting and mining—instead of being wasted or misappropriated.

ABOUT 15 years ago, Congressman Edward T. Taylor, whose home address is at Glenwood Springs, Colorado, had in his files the rough draft of a bill embodying the features of such an experiment in financing. It provided for the selection, under supervision of the United States Bureau of Mines, of local inspectors or check-up men in each mining district. These should be men of integrity, rendering service without pay, and interested in the welfare of their communities. It made provision for the display of information synopses on bulletin boards at post offices in communities where citizens request such service. It also provided that citizens could subscribe for participations in prospective mining partnerships, in amount up to 50 per cent of funds left by them, respectively, on deposit in the postal savings branch for some definite period prior to subscrip-

tion. Such a provision would tend to prevent citizens from risking more than they could afford in speculative mining ventures.

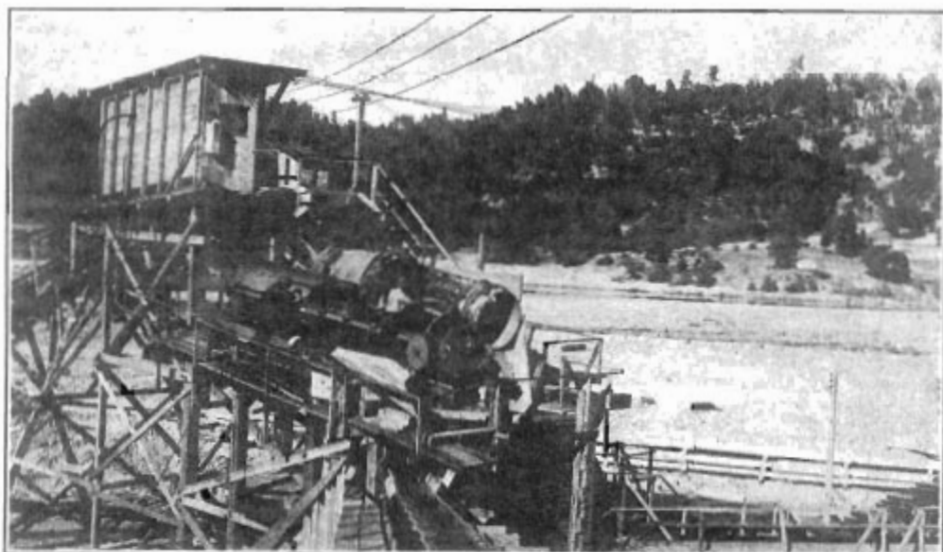
At the time Congressman Taylor had the matter under advisement, he expressed approval of the idea, but also expressed doubt that any measure could be reported by committee unless there was "something in it" for a majority of members of such committee. As the bill provided only for the authorization of an appropriation of a mere \$5,000 for a self-liquidating fund for an experimental tryout of the plan, there was, of course, "nothing in it" for committeemen.

Likewise, in the horse-sense measure suggested above, there is "nothing in it" for senators and representatives—except the votes of such citizens as may approve some such plan for reviving the old mining camps of the United States.

GOLD TO BE RECOVERED FROM GRAVEL USED IN NARROWS DAM

HUNGARIAN riffles have been installed in the tailrace of the 200-yard-per-hour sand and gravel classifying plant recently placed in operation at Park's Bar, Yuba County, California, by the builders of the huge Upper Narrows debris dam. More than 600,000 yards of gravel will be run through the plant within the next few months and it is believed that considerable gold will be recovered. Park's Bar is the beginning of the great Hammonton dredging fields and was covered with 80 or more feet of tailings during early-day hydraulic operations.

Joint contractors on the Upper Narrows dam are the Arundel Corporation of Baltimore, Maryland, and the L. E. Dixon Company, 609 South Grand Avenue, Los Angeles, California, who submitted the low bid of \$2,175,271 for its construction. The huge structure will rise 257 feet above the river bed and will be approximately 1,200 feet long at its crest. It is estimated that 334,410 cubic yards of concrete will be used in the dam.



The gravel classifying plant which was erected by the builders of the Upper Narrows debris dam on the Yuba River. The gravel plant, which has a daily capacity of 200 cubic yards, has been equipped with Hungarian riffles in tailrace to catch the gold.

*Editor, Engineering Index, Inc., New York

Measured THOR

means
FASTER
DRILLING
AT
LOWER COST



A THOR MACHINE FOR EVERY JOB

ROCK DRILLS

Made in several types and a wide range of sizes to meet varying requirements for sinking, drifting and stoping.



PAVING BREAKERS

Both valve and valveless types for light, medium or heavy duty demolition and street opening work.



CLAY DIGGERS— TRENCH DIGGERS

Light and heavy duty tools for digging gravel, clay and hardpan . . . for trench digging, shaft sinking and excavation where ground is frozen or unusually stiff.



COCHISE ROCK DRILL MFG. CO.

A Division of the
INDEPENDENT PNEUMATIC TOOL CO.
6200 EAST SLAUSON AVE., LOS ANGELES, CALIF.
NEW YORK CHICAGO SAN FRANCISCO

FLEXIPIPE

The improved flexible tubing for
mine and tunnel ventilation

FLEXIPIPE adds to your profits by increasing the efficiency of your men. Smoke and gases are blown away quickly after shooting, and your men can return to their work within a few minutes time.

Send for free sample and full information.

BEMIS BRO. BAG CO., ST. LOUIS, MO.

tending for approximately three miles along the Trinity River near Salyer, California. The companies are also seeking additional holdings in the district. If the tests prove favorable, it is understood that a bucket dredge with a capacity of 4,000 yards daily will be installed. The Yreka company is headed by Etheredge Walker, 351 California Street, San Francisco, and Walter W. Johnson, president of the Arroyo Seco, is vice-president of Yreka. Johnson also is addressed at 351 California Street.

Directors of the **St. Joseph Lead Company**, 250 Park Avenue, New York City, have declared an extra dividend of \$1 a share in addition to the regular quarterly dividend of 25 cents on common stock, both payable December 20 to stockholders of record December 8, bringing total 1939 payments to \$2. Clinton H. Crane is president of the company.

The **Comstock Gold Point Mines Company**, John N. Richardson, general manager, 418 Richfield Building, Oakland, California, which recently acquired leases on the Hardscrabble and Laurel gold mines in Calaveras County, is reported to be completing plans for extensive operations. Both mines are said to contain important ore bodies. The company is also working claims in the Currant Creek district of Nye County, Nevada.

The state corporation commission has issued a permit to the **Baltic Mines Corporation**, Florian Sciaroni, president and general manager, Grizzly Flat, California, authorizing the firm to issue and sell 25,000 shares of its capital stock at its par value of \$1 a share. Proceeds from the sale will be used to purchase equipment and inaugurate production at the Columbus and Mount Hope mines.

The **Best and Belcher Gold and Silver Mining Company**, H. L. Slosson, Jr., president, 333 Kearny Street, San Francisco, California, has secured an extension of its option on the Sceiffard Ranch property and 1,000 feet of adjoining property near San Andreas, California. The main working shaft, which had been sunk to 310 feet, is being deepened to the 350-foot level where laterals will be extended both north and south.

It is understood that stockholders in **Alhambra-Shumway Mines, Inc.**, Kelsey, California, have received a 30 per cent dividend on their investment, following the opening of high-grade deposits in the mine. The company, headed by Coalinga and Fresno business men, has been engaged in developing the property for the past two years. John H. Webb, 180 Monroe Street, Coalinga, is president. Operations at the mine are directed by Ray M. Henricksen, superintendent.

Wilber Timm, Kelsey, California, who formerly owned the Alhambra-Shumway Mines property, reports that he has bonded the adjoining **Atlanta** mine for a quarter of a million dollars to Clarence Brown, Metro-Goldwyn-Mayer film director. It is understood that a new company will be incorporated to develop the property and active work is to begin within 90 days. Two drifts are to be run from the two-compart-

ment, 150-foot shaft, one 400 feet to the east and another 350 feet to the west on the course of the vein. Jafet Lindeberg, who has been operating the Greenwood mine at Greenwood, California, will direct work for the new operators. Timm is at present working a crew of men in the development of the **Blue Ledge** mine northwest of the Alhambra property. Exploration work is being carried on in a 400-foot tunnel.

The **Blue Point** property near Kelsey, California, totaling about 40 acres and comprising the Blue Point, Yellow Jacket, and Lone Spring claims, has been acquired by E. H. Harper, Fresno, California, banker. Development operations and shaft sinking are to begin immediately.

The **Shumway** mine, adjoining the now famous Alhambra property at Kelsey, California, has been acquired under bond and lease by H. G. O'Hanlon, 464 Seventh Street, San Francisco. The property comprises about 80 acres. The Shumway was formerly held by Alhambra-Shumway Mines, Inc., but was dropped by that company shortly before the recent gold strike in the Alhambra.

Development work is contemplated at the **Gypsie Queen** mine on Coffee Creek by Miss Leone G. Conant, owner and operator, Carrville, California. It is planned to develop a footwall of rhyolitic quartz ore. Installation of a 30-ton milling plant next spring is also under consideration. A 16-foot vein carrying high-grade ore is reported to have been encountered in the mine recently.

A one-stamp mill is in operation at the **Geneva** mine in the Coffee Creek district near Big Flat, California, and a high-grade concentrate of sulphide ore is being shipped.

George Anderson and John Stoddard have been engaged in installing a milling plant at the **Squirrel Gulch** mine near Trinity Center, California. Anderson is also associated with Walter Sack in a property located five miles up the east fork of Coffee Creek and construction of a road to the mine is contemplated.

The **Eureka Sky High Mines, Inc.**, recently incorporated, is employing a crew of six men at its property near Incline, California, and development is under way. The shaft is at present down approximately 70 feet and drifts are being run in two directions at that level. John C. McGarry, Incline, is general manager. James H. Cannon, 420 West Avenue Thirty-three, Los Angeles, California, is president of the new company.

Henry and Herbert Paine, North Bloomfield, California, have made a number of improvements at their property in Humbug Canyon preparatory to active operations as soon as water is available. Among the improvements are a new dry house, an automatic water gate, and a movable carriage for handling boulders. They have approximately 40 acres of ground to be worked.

The **Grass Valley Boundary** mine south of Grass Valley, California, has been timbered to the 400-foot level, 100 feet beyond the caved portion. Mining operations

are expected to be started as soon as mine equipment can be installed. Arthur Hellings is superintendent. The property was acquired recently by John N. Becker of Town Talk.

Jim Dobbas, Auburn, California, and associates have secured an option on the Ferrandy ground at Columbia Hill, owned by Jay Coughlin, supervisor of Nevada County. The option calls for a cash payment following a 120-day examination period. The property adjoins the Shovel Placers, which are being prepared for a resumption of operations.

A dry land dredge has been installed at the McGinniss placer property in the Quaker Hill district. The new dredge requires a very small quantity of water for operations. The mine is being developed under lease by Richard Richards of Chico, California. He constructed two reservoirs during the summer for the storage of water and other improvements included the construction of a road to the old diggings and repairing of the flumes and the ditches. The plant is now ready for operations, which will be on a three-shift basis.

The Mariposa-Washington Mining Company, E. Bradford Newcomb, manager, Hornitos, California, is now operating on a three-shift basis with an increased crew of men. The company has been working on a two-shift basis awaiting a sufficient supply of water to permit three-shift operations. The mine is equipped with a milling plant which was completed and placed in operation last July.

Work has been resumed at the Cotton Creek mine in Hunter's Valley near Hornitos, California, following a brief shutdown for repairs to equipment. The mine is operated by the Cotton Creek Mining Company, W. H. Hauser, president, 707 Mac-Donald Avenue, Richmond, California.

The Diamond T mine near Hornitos, California, is being developed under the direction of Frank Bartholome of Portola, California, who is now located at the mine. Additional men have been put on to augment the mine crew.

Charles E. Hope, 1958 Virginia Road, Los Angeles, California, has acquired a one-third interest in the Emerson Gold Ridge mine near Victorville, California, from O. D. Thomas, 924 South Catalina Street, Los Angeles, California. It is planned to purchase four cyanide tanks and other equipment for the mine. Operations at the property are directed by Thomas.

A three-cubic foot bucket ladder dredge is being installed near Roseville, California, by the Roseville Dredging Company, Norman Cleaveland, 351 California Street, San Francisco, California. The new plant is expected to be on a production basis early in December.

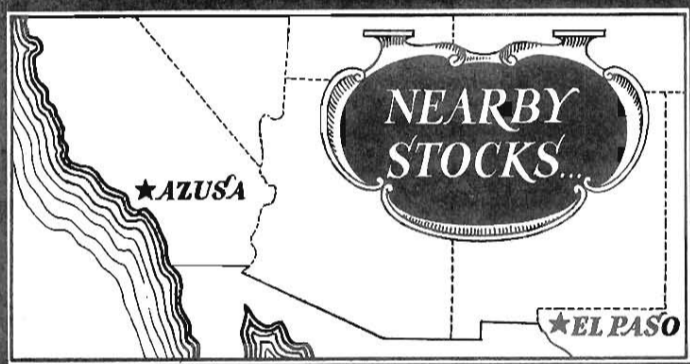
Three shifts of five men each are making good progress in driving the 6,000-foot crosscut from the Murchie mine of the Empire Star Mines Company, Grass Valley, California, to the Banner Mountain section. The crosscut has been driven forward more than 1,300 feet. Limited work by

lessees is being carried on in the upper levels of the Murchie mine at present but all development work by the company ceased some time ago. Robert J. Hendricks, Nevada City, California, is manager of the Murchie.

The General Gold Corporation, O. Jack Boucher, 505 Bank of America Building, Sacramento, California, has acquired the South Gulch Placers' dragline dredge equipment near Milton, California, from E. R. Bacon. Water is supplied from a well and extensive deposits of profitable gravel are reported available. Luther Hadley will continue to direct work for the new operators. Hadley is also in charge of work for the Milton Gold Dredging Enterprise, operating in the same district.

Frank W. Royer has completed the installation of a custom mill near Randsburg, California, and tests are being made to determine the efficiency of the plant before accepting ore for treatment.


Major R. Laneville, Covina, California, inspector of the United States Geological Materials, is superintendent of a fluorspar mine 17 miles northeast of Box S Ranch near Lucerne Valley, California. The product will be sold through the government on contract which stipulates that \$20 per ton on the dump will be paid, with production pegged at 500 tons weekly. Arrangements are being completed for shipping to a government approved mill similar to the plant at North Berkeley, California. There is a possibility that such a plant may be built in the vicinity of Los Angeles.



Large or small, your mill is never remote from Cyanamid's stocks of cyanidation and flotation reagents at Azusa, California and El Paso, Texas. By covering your complete needs from these convenient points, you get prompt delivery, reduce freight costs, and simplify purchasing routine.

Write for descriptive stock list and quotations

AMERICAN CYANAMID & CHEMICAL CORP.

AZUSA, CALIFORNIA  EL PASO, TEXAS



QUICK SHIPMENT **COLUMBIAN BOLTED STEEL MINING EQUIPMENT**

No costly delays when you want Columbian Bolted Steel Mining Equipment. Your order is handled in record time by an expert staff of engineers and designers. Then it is fabricated in one of the best equipped manufacturing plants in the middle west and with modern presses especially designed for the purpose.

Order Now from our distributors listed below— or write direct to us for more complete information.

- AGITATORS
- THICKENERS
- SOLUTION TANKS
- ORE BINS, Etc.

Lower your costs with Columbian built mining equipment. Engineers and operators alike have learned from actual experience that it is best for endurance and trouble-free service. Bolted steel agitators, thickeners, ore bins, solution tanks, etc., are for permanent installation yet portable if change in location is necessary.

Standard construction for domestic use or for export via ocean freight. Special if for export via mule-back or aeroplane to final destination.

COLUMBIAN STEEL TANK CO.
KANSAS CITY, MISSOURI

DISTRIBUTORS
DENVER EQUIPMENT COMPANY, 1400 Seventeenth Street
Denver, Colorado
EIMCO CORPORATION, 634 South Fourth West Street,
Salt Lake City, Utah

The Idaho Maryland Mines Corporation, Albert Crase, general manager, Grass Valley, California, is proceeding with sinking programs at its three properties, the Idaho-Maryland, the New Brunswick, and the Bullion. At the New Brunswick the present three-compartment, vertical shaft has just been completed to the 2,300-foot level and workmen are now engaged in driving to greater depth, which will eventually reach the 4,000-foot level. Station cutting is in progress at the 2,300-foot level with a view to installation of hoisting equipment later which will be used in sinking to the 4,000-foot mark. Two veins have been cut in the downward development program at the New Brunswick but they are not being explored at the present time. At the Idaho-Maryland work has been started on sinking the 850-foot inclined winze another 500 feet. The winze, originally sunk from the basic 2,000-foot level, has recently been cleaned out. The Bullion mine, which has been developed by winze from the 1,500-foot level for some time, is now reported to be at the 2,260-foot level and general mining and production are on routine schedule.

The Caledonia Development Company, Roger E. Jones, president, Downieville, California, has placed orders for a screening plant, jig, and steam shovel, which are to be used in dredging operations in Sierra County. J. M. Shackelford, mining engineer, is directing operations.

COLORADO

The Kekeonga Mining Company is reported to be unwatering the Kekeonga mine in the Magnolia district of Boulder County, Colorado. The shaft has been unwatered to the 400-foot level and development will be started at this point. Frank Smith, Magnolia Star Route, Boulder, is in charge, employing a crew of three men. Several years ago this property was operated by the Magnolia Consolidated Mines Company.

S. F. Wright of Boulder, Colorado, is leasing the Emancipation mine and dumps



near Boulder and has granted split-check leases in both the mine and dump. About 15 men are employed at present. Dump material is hand-sorted and mining is underway on the 160-foot level and in the Emancipation No. 1 and Gardiner tunnels. The property is owned by the Emancipation and Consolidated Mines, Inc., 157 East Erie Street, Chicago, Illinois. Values are in gold and silver.

A 2-cent dividend was recently paid by the Cresson Consolidated Gold Mining and Milling Company, Merrill E. Shoup, Box 86, Colorado Springs, Colorado, president. For the three-month period ended November 1, 1939, the company reports a net profit of \$28,306. Both mine production and development are being maintained, with lessees continuing to account for about 50 per cent of the production. Pumping operations on the eighteenth level have been discontinued because of expense. This area of the mine will be drained by the Carlton tunnel when it is completed.

Tests are being conducted for Robert D. Webb of the Metallic Extraction Company to determine the feasibility of running the company's dump ore through its 500-ton flotation plant at Florence, Colorado. J. M. Dodson of Florence is local manager for Webb. William Helm of Denver is in charge of testing operations, employing a crew of eight men.

At a recent hearing before Frank McLaughlin, referee in bankruptcy, Frank Stewart of Gunnison, Colorado, trustee in bankruptcy for the Eldorado Gold Mining Company, was authorized to enter into a compromise agreement with Dr. F. R. Bryant of Kansas City, Missouri. Under the terms of the compromise agreement, Stewart would take charge of the property subject to equitable lien for monies advanced for the protection of the property by Bryant. It is believed that the mines can be sold for enough to liquidate this claim and

all outstanding labor claims. These holdings include the Cleveland and Pelican groups of claims and a modern reduction mill located in Hensen Creek Gulch about a mile from Lake City in Hinsdale County, Colorado.

The Rawley Mine and Smelting Company is reported to be moving a 50-ton smelting plant from Ouray, Colorado, to Bonanza in Saguache County. John McDonald is president and general manager of the company; John Linglebach, 3250 Lawrence Street, Denver, is in charge of installation; and Ivan Johnson is roaster foreman. Custom ore from the district will be treated.

The 50-ton mill near Idaho Springs, Colorado, which C. M. Lyon of Idaho Springs and associates built, is being completed and will be put into operation early in December. The plant is equipped for amalgamation and gravity concentration. B. W. Ferris has been in charge of construction work. The plant will treat ore from the Diamond Joe and other properties in the district.

Development of the American Nettie mine at depth is being undertaken by William A. McCullough and Floyd Withrow of Ouray, Colorado, who have held a lease on the property for the past 10 years. A power hoist has been installed and equipment on the ground includes a 25-ton amalgamation plant. The property consists of 14 claims in the Uncompaghre district near Ouray.

While winter weather is forcing a suspension in development work on the Golden Fleece vein of the Treasure Mountain Gold Mining Company, extension of the Santiago tunnel will be continued. Supplies have been taken in and the tunnel will be driven some 800 feet to undercut the Golden Fleece workings. Guy L. V. Emerson, Midland Savings Bank Building, Denver, Colorado, is president and D. M. Haynes, Box 503, Silverton, is general manager. The property is located in San Juan County near Silverton.

The Gold Hub Mining Company plans to resume operations about January 1, 1940, at its Ariadne mine and 75-ton flotation mill in the Gladstone district near Silverton, Colorado. A. H. Coleman of Montrose is general manager and Charles S. Downing, 519 Denham Building, Denver, is presi-

"Doing a great job in the mining industry"

... these words of praise come from mining men everywhere

THE SMITH PORTABLE AIR COMPRESSOR

Priced at LESS THAN HALF the cost of standard compressors of equal capacity. The Smith Motor Compressor is being used throughout the Western States, Alaska, Canada, Mexico, South America, South Africa, and other countries wherever small mines are being operated. It will operate any of the medium weight rock drills to a depth of ten or twelve feet. It is the ideal machine for prospecting and test hole drilling because of its light weight and portability. Even though you have large stationary and portable compressors, you still need a Smith Motor Compressor for these jobs. It uses only one gallon of gasoline an hour, and repair parts are available at your nearest Ford dealer.

With a Ford Motor and shop facilities you can assemble your own compressor. We will furnish a Smith Compressor Head and Accessories with instructions for mounting.

Write TODAY for complete information!

GORDON SMITH & CO. 445 College St., Bowling Green, Ky.
Incorporated



Formerly, when the grade of concentrate rose to more than 1.2 ounces per ton, the increase was simply due to a higher than average head. This is apparent as the moisture and insoluble content remained high. Such is the case also with present practice, but the grade is consistently higher with insoluble and moisture consistently lower.

Shipments of concentrate have increased by more than 50 tons per month over previous concentrate shipments in the same period, same tonnage and head. This result is solely ascribable to the use of Emulsol X-1 in permitting extremely rapid removal of the froth in the same number of cells as formerly used. Lower tails naturally followed in the wake of more efficient removal of values into the concentrate. Average extraction formerly was around 80-83 per cent; now it averages 88-89 per cent.

Former practice of feeding the full amount of frothing agents at one point was discontinued in favor of individual cell feeding with midget Denver Equipment feeders. This procedure prevents starvation of the cells in a degree increasing as they are farther away from the initial intake cell. The fact that pine oil or any oily frother, being quite insoluble in water and lighter, will quickly rise to the surface of the pulp with the froth bubbles and overflow the discharge lip precludes the possibility of succeeding cells getting sufficient frother. Emulsol X-1, on the other hand, readily dissolves or, rather, emulsifies in the pulp solution and is dispersed quite thoroughly, so that its presence in all succeeding cells is evidenced by the bubbles being much larger and having extreme clarity, so characteristic of the Emulsol bubble.

Where difficulty is experienced in securing a thorough dispersion of straight pine oil, as was the case here in feeding the pine oil to the intake of each cell, excellent dispersion is secured by simply dissolving some Emulsol X-1 in the pine oil. Upon contact with the pulp solution the contained Emulsol quickly emulsifies the oil, forming minute droplets of oil instead of large drops which, as they accumulate, may suddenly be drawn into the cell, causing excessive surges and a dirty froth.

Though the cost per pound of Emulsol (about 45 cents) is considerably higher than common frothing agents, its use at Jardine has more than justified this cost, not only in terms of monetary returns from higher grade concentrate and lower concentrate marketing costs, but also in smoother, uneventful operation and lower flotation tails with the same number of cells.

The consumption of Emulsol X-1 is exceedingly small, averaging about 0.0125 pound per ton. A barrel of 425 pounds has sufficed for the flotation of over 30,000 tons of ore and the shipment in a 3-month period of only 597 tons of wet concentrate against a possible 1,000 tons at the old moisture and insoluble content, with consistent and higher concentrate grade. The savings in trucking, freight, smelter treatment charges, and greater returns for higher gold content are very apparent and substantial.

TO FURTHER illustrate the practical effectiveness of Emulsol X-1 on a different type of ore, one consisting only of pyrite, galena, and free gold in a granitic gangue. I may cite the practice at the San Francisco mine, located about 70 miles by motor south of Kingman, Arizona, in the Hualapai Mountains.

The original flotation practice of using Aerofloat 31 as the frothing agent in conjunction with Pentasol Xanthate was discarded in favor of Z-3 and Emulsol X-1 exclusively as the frother. A sample of X-1 had been tried by previous millmen, but with apparent difficulties in feeding and consequent return to Aerofloat. Upon the writer's engagement, instead of using it in accordance with the practice of dissolving it in a solvent, such as ethylene dichloride, a 2½ per cent and a 5 per cent water emulsion were made.

The 2½ per cent solution was prepared by dissolving 1 pound of the liquid Emulsol in 19 quarts of luke warm water. This thin emulsion readily drips from an ordinary drip feeder, although better results are obtained by using some type of mechanical feeder located close to the point of addition.

The points of addition in the San Francisco mill were to the scoop feed of the 3-foot by 3-foot regrind mill which discharged the -16 mesh screened pulp to a Denver unit cell. By maintaining a froth of only ½ inch to 1 inch, an extremely coarse sulphide concentrate of gold-bearing pyrite and galena was obtained. The froth would be so heavily armored with bright mineral that only by keeping it shallow could efficient results be obtained at this stage of the recovery process.

Tails from this unit cell flowed into a rake classifier, the overflow of which entered the cleaner cell of a four-cell Denver Sub-A machine—economy type. Emulsol X-1 (5 per cent solution) was mechanically fed to the cleaner and first rougher. The two final roughers were fed 2½ per cent solution.

The froth in the cleaner cell was kept at a depth of 12 inches to 15 inches. Its concentrate, although of course finer than that from the unit cell, was equal to and, at times, higher in grade than the unit cell concentrate.

A pilot table followed the bank of four cells with an automatic sampler interposed between cells and table. By constantly maintaining two inches to three inches of froth on the last two roughers it was possible to keep the pilot table free of sulphide particles. The froth in the last cells was practically always a soapy white.

Results obtained when Emulsol was used exclusively as the frother and one of the so-called weakest Xanthate as the collector were striking when compared with Aero-

float 31 and Pentasol Xanthate or Z-5. Where formerly grade of concentrate averaged \$110 per ton, the new practice yielded a \$276 per ton concentrate, simply by floating only a small fraction of the gangue and slime in the ore, made possible by Emulsol. The most striking, observable improvement was the rapidity of filtration of a batch of concentrate in a Denver pan filter. Three to four hours would be required formerly to filter a batch; 20 to 40 minutes only were required with the new concentrate.

Inasmuch as an Emulsol X-1 froth drains its slime rapidly (due to bubble size and non-collectivity), the mineral values in the froth can be swept over the cell lip far more rapidly than with any of the usual frothers. This procedure enables the flotation to be carried within the time constant, thus preventing values escaping into the tails and showing up on the pilot table only to be returned to the classifier overflow for refloatation.

Tails formerly had averaged around \$1.25 per ton, as the type of frothing agent used prevented the operator from recovering nearly all the values, yet secure a marketable concentrate grade, in the time constant. The new practice yielded tails that most consistently remained at 18 to 23 cents per ton.

WAGE-HOUR DIVISION MAKES SURVEY OF MINE COMPLAINTS

THE Wage-and-Hour Division of the United States Department of Labor is making a survey of the effects of the wage-and-hour law on metal mining and milling operations in the United States. The survey is being conducted in order to determine the problems of the industry.

A questionnaire is being mailed to large and small mine operators in order to gather data as to just where the new law has restricted mining or imposed new burdens. Officials of the Wage-and-Hour Division urge that the questionnaires be filled out promptly so that they will have the necessary facts with which to work.

Definite assurance has been given that the data will be strictly confidential and will be used for the purpose at hand and in no other manner. Only collective figures will be issued and the identity of individuals will not be revealed in any way.

ATLAS GOLD DREDGING STARTS ACTIVE OPERATIONS IN OREGON

THE Atlas Gold Dredging Corporation, formerly operating on Deer Creek near Grass Valley, California, is moving its dredging equipment to Althouse Creek near Holland, Oregon. Operations will start shortly after January 1.

The company has been testing ground in Oregon, Nevada, California, and Idaho during the past two years and this is the first of several properties lately acquired to be dredged. It is estimated that there is sufficient material to assure several years of profitable operation. H. J. Achley, 102 Brockington Court, Grass Valley, is general superintendent and Frank E. Ford, Edison Building, Los Angeles, is president of the company.



made from those that appear from preliminary examination to promise most with respect to the national objective, without regard to their geographical situation. No allotments will be determined by state or other geographical boundaries, as this would defeat the purpose of the act.

In general, properties likely to yield only small, rich ore bodies will not be selected, as the cost of exploration would be excessive in proportion to the tonnage of metal that might be derived from them. Preference will be given to properties whose ores appear to be subject to concentration into an acceptable product of which a large tonnage might be disclosed by systematic exploration, especially by drilling. With respect to such deposits there is no presumption that they should prove to be commercial in ordinary times. It is the scarcity of commercial deposits of these minerals that has caused them to be declared strategic. The hope is to find marginal and moderately submarginal properties that may nevertheless yield substantial tonnages under circumstances in which the cost of production would not be of major importance.

AVAILABLE funds are only adequate to permit the conduct of about eight projects at a time. The consent of owners of the properties selected must be obtained before work upon them is begun. No stipulation as to the work to be done is made, and no work is undertaken by request or for the purpose of benefiting the owner. Neither will any report be supplied for use in promotion. The only undertaking by the Bureau of Mines is that of providing a copy of any assay charts made in order that the owner may be informed as to values and widths of ore disclosed by the investigations.

All sampling on projects is done with extreme care, large samples being shipped to a metallurgical laboratory of the bureau for reduction, analysis, and the conduct of beneficiation tests. If commercial ore is found it is the privilege of the owner to mine it, as no reservations are made to retain any control of property by the government. Neither is the owner of a property investigated subject to any charge for any benefit he may happen to receive, although he is expected to grant free access to all parts of the property for purposes of sampling and to permit the use by the bureau during the conduct of its investigations of any equipment he may have available on the property, not essential to his own operations.

The objective of these investigations is unusual, in that they are not concerned primarily with the commercial possibilities of the deposits; a reorientation from the normal approach to mineral exploration is thus required. It is not to be supposed that large deposits of commercial promise have been overlooked by private enterprise; but private industry has no incentive to develop submarginal or even marginal ores. It is known that some large deposits of this character have been explored only superficially, and it is probable that there are many others. Deliberate investigation of these deposits, while time permits

thorough exploration and the development of methods best suited to their beneficiation and processing, will save much confusion, inefficiency, and waste of time and money in the actual event of a national emergency.

In some circumstances even negative results of investigations would prove of great value because definite proof that specific deposits could not be relied upon as sources of supply at any price would aid in determining what should be stocked in advance of an emergency and also to show what research for the development of substitutes is necessary. Insistence of owners that certain deposits contain large resources, in spite of virtual proof to the contrary, has created in some minds a false sense of security regarding emergency protection. Some properties of this kind will doubtless require investigation now in order that in an actual emergency the facts in regard to them may be well understood.

In effect, the government desires to know definitely its natural resources of the several strategic minerals—the tonnage, grade, quality, and rate at which production can be maintained—as well as the cost of mining and beneficiating the minerals to provide a usable product. Such information is obviously necessary for intelligent planning of national defense and meeting industrial needs if our usual supplies of imported minerals should be cut off through interruption of sea-borne trade.

FARM-DREDGE QUESTIONS DISCUSSED BY F. W. LIBBEY

ABULLETIN, known as No. 19, "Dredging of Farmland in Oregon," has been issued by the Oregon State Department of Geology and Mineral Industries. F. W. Libbey, mining engineer of the department, is the author of the bulletin and Earl K. Nixon, director of the department, wrote the introduction.

Persons who have had occasion to discuss the effect on the state of dredging croplands have raised such questions as: What is the value of various kinds of lands being dredged for gold in this state? What is the average amount of gold obtained from an average acre of dredge land? How much of the gold recovered goes into local wages, supplies, taxes, etc.? What percentage of the lands being dredged yearly in this state are waste land, meadow land, crop land, etc.? How much gold is being produced annually by the dredges in the state? What is the answer to the question of resurfacing after dredging in Oregon? Is the statement that dredging takes land out of production for future generations defensible? Is the statement that "dredge tallings look like hell" defensible? How can the costs of stripping overburden and resoiling after dredging be calculated? What are the pertinent facts connected



with dredging in the John Day Valley? How can we compare the destruction of farm land by dredging with its destruction by other agencies?

These and other questions relating to dredging in Oregon are answered in the bulletin above referred to. The report includes a compilation of facts pertaining to dredging, an unbiased engineering analysis of these facts, and conclusions which should be of value to persons interested in dredging, not only there but wherever dredging is carried on.

The bulletin will be sent postpaid upon receipt of the price, which is 40 cents. Address the State Department of Geology and Mineral Industries, 329 South West Oak Street, Portland, Oregon, or either of the state assay laboratories at Baker or Grants Pass.

DAYTON CONSOLIDATED REPORTS GREATER BULLION SHIPMENTS

THE Dayton Consolidated Mines Company of Virginia City, Nevada, reported bullion shipments of over \$100,000 for the second consecutive month, when the November values reached \$104,320. This bullion was obtained from the treatment of 5,428 tons of Dayton, Keystone, custom, and lease ores, with an average recovery of \$19.22 a ton.

Development was carried on during October on the usual scale in the Dayton, Keystone, and Justice ground. In the Keystone efforts are being directed to greater depth through reconditioning the Lady Washington shaft for use as a winze below the 400-foot level. The shaft was found to be in bad condition, resulting in slow progress. Retimbering has been completed 70 feet below the 400 level and more rapid progress toward the 600-foot level is expected.

In the Justice mine work is being confined for the time being to a drift south on the 400-foot level, which is being extended to the vicinity of the Barclay shaft, where work of lessees nearer the surface has shown ore of a commercial grade to exist. The drift is passing through hitherto undeveloped ground and the management is hopeful of early ore developments in this section.

Development work in the Dayton mine is on a one-shift basis, centered on a cross-cut west on the 220-foot level in the north end of the mine, where it is hoped that another hanging wall segment of the Dayton vein will be found. Further efforts in the footwall area are being deferred pending a new geological study of the mine. The advisability of diamond drilling to greater depths is also being considered.

Bullion shipments during 1939 already have considerably exceeded those for any previous year in the company's history. This is due largely to the fact that about one-third of the total tonnage treated has been custom ore, which is higher in grade than company ore. A moderate improvement has also been shown in the grade of company ore treated. Operating profit for the last quarter is expected to equal that of the first three quarters, which amounted to about \$43,000.

PHIL BURCH* relates the history of

The Timberland Steals in California

AROUND the turn of the century California's gold mining industry received a below-the-belt wallop from which it has never recovered. Already groggy from the paralyzing effects of the Sawyer Decision of 1884 outlawing hydraulic mining, the shaggy old giant of forty-nine was literally lifted from his feet by the impact of the great timberland steals of the late nineties and early nineteen hundreds.

The foundation for the timberland steals was laid with the passage by Congress in 1878 of the Timber and Stone Act. No law in the history of the nation ever contained more holes than this one. Through it, anyone with the intelligence to read could crawl to fame and fortune while feeding at the public trough. Perhaps its most naive provision was the one which permitted "dummy" locations of non-mineral lands to the extent of 160 acres per person. After performing certain minor labor requirements, swearing the mineral off the land, and paying a fee of \$16, the locator received a clear title to the land which, by former agreement, he immediately transferred to the individual or group in whose employ he happened to be.

The big steal did not really get underway, however, until 1897 when Congress passed the so-called Forestry Law which contained what has come to be known as the "lieu scrip clause." Literally, the "lieu scrip clause" provided for the purchase of non-mineral public lands with scrip issued to civil war veterans for services rendered and to the railroads in exchange for certain worthless sections of desert land given them under the various railroad subsidy bills. Surely no legislator who voted for these measures can be vindicated on the grounds that it would have taken a crystal gazer to anticipate the result of their passage.

The brazen, unseasoned filching of national resources during the next decade would have done justice to a Henry VIII. Incredible as it may seem today, tens of thousands of acres of California's richest timbered mineral land were removed from the public domain and the right of mining entry during this period. As a result, the great fortunes of the timber barons were founded, and the future of California's mining was definitely confined to an infinitesimal portion of one of the world's greatest precious metal areas.

A fair idea of what took place during this era of unfettered looting can be gleaned from a report submitted by John A. Edman to the state bureau of mines in the winter of 1905. In his capacity as special investigator for the California bureau, Edman covered in detail the timberland steals in seven townships of Plumas County, one of the richest counties in the

*Oakland, California.

The story of the timberland steals in California once again justifies the old saying that "Truth is stranger than fiction." These hundreds of thousands of acres, no longer valuable as timberlands, are still closed to mineral entry because of the false affidavits under which they were originally acquired.

state in both timber and mineral. For political reasons, no doubt, Edman's report was never allowed to see the light of day.

By 1902, Edman reported, (and his figures were conservative) no less than 160,000 acres of the best timbered mineral land in Plumas County had been acquired by a few land speculators and timber combines under "dummy" locations and by "lieu scrip" selections. Certificates of purchase, then pending, were later issued to the extent of at least another 50,000 acres, bringing the total to over 200,000 acres for the county. In the seven townships specifically covered, two men, T. B. Walker and Wm. E. Wheeler, acquired over 35,000 acres.

AT LEAST 90 per cent of this land was then, as it is now, known to be highly mineralized. Still, its acquisition was only possible on sworn testimony that it was non-mineral in character and valuable only for its timber and agricultural resources. No expert geological opinion was required. In fact, the testimony of any barroom stiff, willing to perjure himself for the price of a few drinks, was acceptable.

The farce was carried one step farther and such methods were even used to obtain land actually being mined. For instance, in 1900 J. H. Cook of New York City and J. F. Standart of Greenville, California, made scrip selections to the extent of 5,000 acres in township 26 N. R. 9 E. In November of the same year, certificates of purchase for this land were issued to Wm. E. Wheeler, also of New York, by the general land office despite the fact that W. P. Boyden, R. L. Laufman, and N. Kutchendor, to mention a few, were actually mining on bona fide claims included in the scrip selections.

Affidavits protesting these and similar scrip selections were ignored by the department of the interior, charged through the general land office with administration of the governing laws.

Attempts to obtain legal redress proved futile in the trial of J. B. Engle, A. W. Keddie, and the Lewis brothers. They were indicted in connection with timberland

frauds in Plumas County in 1902. The evidence in this case was gathered by the department of interior and, although only a small portion of it was used at the trial, the accused were convicted of subornation.

They were, however, granted a new trial and the case was eventually dismissed upon the failure of the grand jury to return a new indictment by virtue of the legal precedent (Page Ripley!) that: "A false affidavit relating to the non-mineral character of land is not perjury, because such an affidavit is not required by law." And this in view of the fact that non-mineral affidavits were the fundamental instruments by which proved mineral land was instantly converted into land valuable only for its timber!!

The timberland steals reached their peak in 1901 and 1902. By 1903 they were practically outlawed, since by that date the "lieu scrip" clause had been repealed and the creation of temporary forest reserves had virtually stopped the dummy locators in their tracks. However, the damage had been done. The legal opinion is pretty well agreed that it is impossible to ever correct the individual injustices committed, but that is no reason why the mining industry should go on indefinitely holding the proverbial bag into which no "snipes" have fluttered for the last 30-odd years.

Conservative estimates place the highly mineralized land now held, in Northern California alone, on non-mineral affidavits in excess of 1,000,000 acres. An idea of what this means may be gained from considering the fact that one may travel for 40 miles through the mountains of Yuba County and never set foot off such land, all of which is owned, in effect, by one company. As for Plumas County, one could travel for a week trying to get off the Red River Lumber Company's holdings.

LEASES TO mine on these properties have occasionally been obtained, but their validity, in view of the non-mineral affidavits by which the land was acquired, is doubtful, to say the least. However, no legitimate operation has ever resulted under one of these leases, simply because the terms of the contract made practical mining impossible.

Most of this land has been so thoroughly cut over that it is now little more than a barren waste, except for its mineral content. But even so, it is being held from productive mining use at the ridiculous tax rate of 35 cents per thousand feet of scalable timber. Based on government standards, there isn't a scalable tree in a thousand-acre plot.

The other side of the tax picture is just as fantastic. For example, one company with holdings in excess of 40,000 acres—

(Continued on Page 34)

Go on Try it

(And don't blame us if you get your head blown off)

Try to do what you make your miners do. Get down into a missed hole and pick out the unexploded dynamite. In the wet muck see if you can tell whether the lost hole was drilled crooked and why powder sticks always stick in the hole and won't come out. Time yourself and your men for a \$20.00 payroll delay on every lost hole or missed shot. For 1-1/4 cts. per shot we can stop all this. Do the way the big companies do, get Miller Blasting Cap Protectors and be sure of a firm waterproof connection between every cap and fuse. For years our protectors have been used by—U. S. Government War Department, Phelps Dodge Corp., American Metal Co., New Jersey Zinc Co., Kildun Mining and hundreds of others. Miller Manufacturing Co.

First National Bank Building,
El Paso, Texas

(Samples free for the asking)



Reg. U. S. Pat. Office

SPIRALOK VENT PIPE

A stronger lightweight pipe
for all

AIR-VACUUM-EXHAUST LINES

Sizes 4 to 8 inches
Write for Booklet S

PACIFIC PIPE CO.

319 Main St., San Francisco

APACHE POWDER COMPANY

Manufacturers of High Explosives for Domestic and Export Trade. All grades of Gelatin and Ammonia Dynamites. Quarry and Grading Powders. Distributors of Blasting Caps, Electric Detonators, Fuse and Blasting Accessories.

Plant and General Office
BENSON, ARIZONA

Title Guarantee Building
411 West Fifth Street
LOS ANGELES, CALIFORNIA

DRY BANK PLANTS

BODINSON

**BUILT
DRAG LINE DREDGES**

2401 Bayshore Blvd., San Francisco

and power is furnished by an oil engine. Approximately 50 tons of free-milling gold ore will be treated daily. Donald Finlayson is mine and mill superintendent and a crew of 14 men is employed. The mine is under lease and option to Howard S. Sanborn and William Gosnell of Rochester, Minnesota.



Directors of the Union Consolidated Mining Company, 155 Montgomery Street, San Francisco, California, have levied an assessment of 2 cents a share on the 164,147 shares outstanding. The purpose of the assessment is to provide funds for taxes, current expenses, and other obligations. J. C. Scoles, president and general manager, in a report to stockholders, stated that the Orion Mining Company is continuing sampling operations at the company's Oro y Plata mine at Murphy, California, and that two proposals have been submitted for consideration. The first calls for a lease to the Orion company with royalties based on mint or smelter returns. The second is a cooperative agreement under which a sum of money will be advanced for mine and mill equipment, with profits from the operation to be divided equally between the two companies.

The Lemroh Mining Company, headed by George A. Hormel, 630 Nimes Road, Bel Air, Los Angeles, California, is carrying on dragline dredge operations on Weber Creek in the Springvale section 10 miles west of Placerville, California. The dredge is operating on the George Williamson property and there is said to be sufficient land available at present to keep the plant in operation for from six months to a year. Adjacent properties are expected to be available at a later date. John G. Hormel also is interested in the project. Both are members of the firm of George A. Hormel and Company, packers.

A 40-ton rotary furnace is to be installed soon at the Contact quicksilver mine 19 miles northeast of Healdsburg, California. The mine is being developed by H. G. Walker, Healdsburg, and he is directing a crew of 15 men at the property. At present the mine is producing between two and three flasks of quicksilver daily. C. E. Halliburton, 703 Helm Building, Fresno, California, and A. B. England, Herul Placer, Ltd., Camanche, California, are also associated in the project. Halliburton heads the now famous Alhambra-Shumway Mines, Inc.

Jewelry rock showing high values was taken out recently at the property of the Mariposa-Washington Mining Company, E. Bradford Newcomb, manager, Hornitos, California. The strike was made at a depth of about 60 feet while sinking a well for the purpose of increasing the water supply. Considerable development is planned for the new strike. The mine was equipped recently with a new milling plant with a capacity of 50 tons in 16 hours.

The dredge which the Lincoln Gold Dredging Company has been operating near Happy Camp, California, has been moved to the Lowden Ranch just above Poker Bar in Trinity County, California. The boat is equipped with a two-yard shovel. E. M. Clark and Walter K. Jansen head the Lincoln company.

Herul Placer, Ltd., A. B. England, superintendent, Camanche, California, is operating a dry land, movable gravel plant near Camanche. The new plant has been working satisfactorily and is expected to have a capacity of 125 to 150 yards per hour when in full operation. C. E. Halliburton, 703 Helm Building, Fresno, California, and W. J. Loring, Oakdale, California, are associated with England in the new company. Equipment includes a trommel and sluices, and water is pumped from the Mokelumne River by means of a 40-horsepower pump.

The stamp mill at the old Doss mine near Hornitos is being moved to the Campo mine, also in the Hornitos district. The Campo is being developed by Nielsen L. Wagner and associates.

The Alaska Juneau Gold Mining Company, P. R. Bradley, president, 1022 Crocker Building, San Francisco, California, reports an estimated November profit of \$128,100 before depreciation, depletion, and income taxes, which compares with \$147,600 in the preceding month and \$173,000 in November, 1938. The November results brought total estimated profit before depreciation, depletion, and income taxes to \$1,231,400 for the first 11 months of the current year, against \$1,907,500 in the like period of last year. Tonnage mined and trammed to the mill in November totaled 336,500, which compares with 386,720 in October. Production was hampered by a four-day interruption caused by mud slides.

Active work is again under way at the property of the Fremont Gover Company, Drytown, California, W. Spencer Hutchinson, Jr., superintendent. At the present time the company is carrying on open-cut mining on a large ore body near the surface. Approximately 200,000 tons of ore will be mined in this manner, a power shovel being employed in uncovering and excavating the material. The mine is opened by two three-compartment shafts, the Fremont, which is down 2,900 feet, and the Gover, which extends to the 1,500-foot level. It is planned to sink to greater depth later.

The historic Fremont Grant of 44,000 acres, some of it rich gold-bearing land, which has been held virtually intact for the past 90 years, is being sold to cattlemen of the region. The grant, located in Mariposa County, is owned by the Mariposa Commercial and Mining Company, Mariposa, California. More than 100 persons have purchased approximately 30,000 acres of the estate in recent weeks and by January 1 the entire tract, with the exception of a few mining sites, will have been disposed of and the physical boundaries of the grant will be wiped out. Placer mining and prospecting on the grant, which has furnished a livelihood to hundreds for

almost a century, will pass as the new owners, mostly cattlemen, fence off their many tracts. Raleigh Casad, Merced, California, and associates plan to lease, with option to purchase, 2,000 acres once known as the Mariposa Mine Extension, for mining purposes. Principal shareholders of the Mariposa Commercial and Mining Company plan to retain holdings on the Mariposa, Princeton, Mt. Ophir, Green Gulch, and one or two other mining properties with a view to possible future development. The dredging leases along the Mariposa, Stockton, and Agua Fria Creeks, held by the Trebor Corporation, will remain in force.

The Climax Dredging Company, a limited co-partnership, has been formed to operate a dragline dredge on Deer Creek seven miles from Grass Valley, California. E. M. Dawes of Lovelock, Nevada, and associates head the project. A dredge previously used on the ground has been repaired and improved. The gravel is estimated to average from 40 to 50 cents a yard and about 1,500 yards will be handled daily. Dawes will be in charge of operations.

The mill at the Falcon mine on Mill Creek 20 miles south of Palmdale, California, has been operating regularly for the past few months. Mill heads have been averaging \$11 per ton in gold. The flow-sheet consists of amalgamation and table concentration and the tails are said to carry less than 50 cents per ton. The mine is being operated under lease by John L. Bischer, 1212 Spring Arcade Building, Los Angeles, California.



A dividend of \$2.75 a share on capital stock was paid to stockholders December 15 by the American Potash and Chemical Corporation, Trona, California. This brings total 1939 payments to \$4.75, as compared with \$2 in 1938. The company has extensive operations at Trona.

The Carson Hill Gold Mining Corporation, 206 Sansome Street, San Francisco, California, has declared a dividend of 1½ cents a share on capital stock, payable December 30 to stock of record December 20. The company paid 1 cent in the September quarter and 1½ cents in each of the three preceding quarters. Mining properties are located at Melones, California.

The Anglo American Mining Corporation, Walter Lyman Brown, president, 206 Sansome Street, San Francisco, California, has canceled and relinquished to the Yellow Aster Mining and Milling Company, its lease contract to the mine and mill and property adjacent thereto. However, the company reserved the right to remove all Anglo American equipment from the property. The discontinuance of mine and mill operations at the Yellow Aster had been

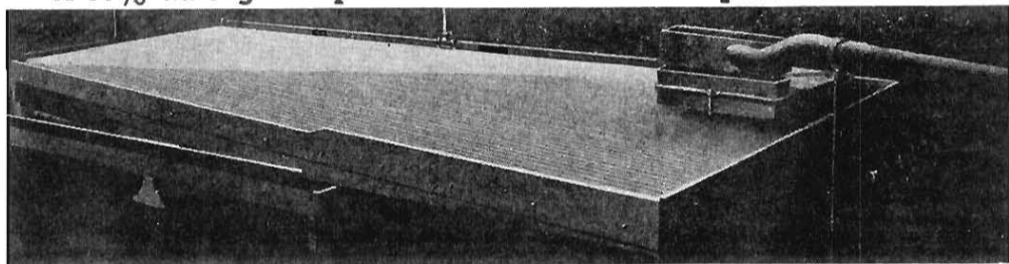
contemplated by the company but the actual shutdown was hastened by a strike called December 1 by employees. The workers sought recognition of the Federal Labor Union as their collective bargaining agency together with consideration of a labor agreement to be negotiated through the organization. The company replied that in view of the contemplated shutdown, there seemed to be little advantage in discussing a labor contract at the present time. A. W. Frolli has been general manager at the Yellow Aster. Extensive mining and milling operations have been in progress at the property. The crushing and screening unit has a capacity of 3,300 tons in 16 hours; the grinding unit has a 1,000-ton capacity in 24 hours; and the cyanide plant, 1,400 tons capacity.

A small crew of men is employed in development work at the May Queen mine in the Dogtown district 22 miles southeast of Placerville, California. During the past two years work has been carried on in an 80-foot, two-compartment shaft sunk in an old hydraulic pit worked in the early days. Equipment at the mine consists of a primary crusher and a set of rolls, followed by a classifier and three concentrating tables. K. W. Dunham, formerly of Pasadena, is associated with Fred C. Fletcher of Pasadena in the project. It is understood that further sinking is planned in the spring.

The Phelps tungsten claims on Hilton Creek 30 miles north of Bishop, California, have been leased on a royalty basis to A. T. Wilkerson and Ralph H. Moore of

A RECORD WE ARE PROUD OF

Eleven years' continuous running—day and night without a cent for repairs and making an average extraction of 99% during that period is a record we are proud of. This is the performance of two Gibson Roller Bearing Concentrating Tables operating at the Melrose Plant of the National Lead Company.



SAVES GOLD OTHERWISE LOST

The Gibson Impact Amalgamator

Repeat orders coming in from all parts of the world are positive proof of the efficiency of the Gibson Impact Amalgamator in saving the fine gold, amalgam and mercury that escape from the other amalgamating devices.



Built in sizes from 25 tons to 2000 tons capacity

Write for new catalogue describing Gibson Counter Balanced Rod and Ball Mills, Prospectors' Friend Mills, Flotation Cells, Amalgamators, Concentrators, Rock Breakers, Ore Feeders, Mercury Feeders, Oil Feeders and Retorts.

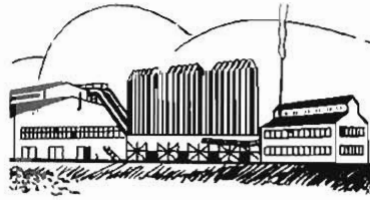
W. W. GIBSON 1801 WEBSTER ST., ALAMEDA, CALIFORNIA

the **Bishop Tungsten Company**, Bishop. It is understood that a large ledge of high-grade ore has been encountered. A road has been constructed to the property and a tram has been built. Ore will be processed at the Bishop Tungsten Company's mill. At present eight men are employed.

Five mines, two mill sites, and two water rights in the Whitlock mining district near Mariposa, California, have been leased by the **Golden Key Mining Company** of Oakland to J. Hartley Russell, Russ Building, San Francisco, California, and J. B. Zimmerman, Coulterville, California. The lease is for a 99-year period and on a 10 per cent royalty basis, with an option to purchase the property from royalties. The properties include the Golden Gate, Hayseed, Regan, Dusenberry, and Haywire Fraction mines; the Regan and Coronado mill sites; and water rights on Sherlock and Whitlock creeks. The agreement provides for continuous mining operations and employment of at least 100 men for a minimum of eight hours each month during the term of the lease.

Natomas Company, Thomas McCormack, president, Forum Building, Sacramento, California, has declared an extra dividend of 20 cents and the regular quarterly dividend of 20 cents on common stock, both payable December 27 to stock of record December 11. These payments will bring the total for 1939 to \$1 a share, compared with 90 cents in 1938.

Three eight-hour shifts are maintained and a total crew of 20 men is employed on the dredge being operated between Jenny Lind and Bellota by the **California Gold Dredging Company**, Guy Standifer, president, 910 Balfour Building, San Francisco, California. The dredge was formerly operated in the Folsom district but was dismantled and reassembled near Jenny Lind two years ago on property leased from A. D. Hunt. It is estimated that another three years will be required to complete the working of the ground available. The plant, which has a capacity of 6,000 yards daily, is equipped with 80 six-cubic foot buckets. W. H. Watters, 3632 McKinley Boulevard, Sacramento, California, is superintendent of the company, and H. F. Whiteside is dredgemaster at Jenny Lind.



Two groups, the **Kelso Valley Tungsten Trust** and the **Fairfield Mining and Milling Company**, with interlocking capital, have acquired several mining properties near Weldon, California, and Havilah, California, and plans are under way for active development. The Kelso Valley organization has acquired under bond and lease the Livingood and O'Connor properties and the Minter property at Weldon, and have also purchased outright four other properties in the district. The Fairfield company has taken over the Miranda group at Weldon, the King and the Prosperity mines at Havilah, and several other claims in the area. George Smith, Weldon mining engineer, who is interested in the two organizations, is acting as general manager. Equipment is being installed at the Minter property and production is expected to begin shortly. Work is to begin immediately at the King mine also. Plans are under consideration for construction of a mill in the Isabella district to handle the production from the various mines.

The **Rustless Mining Corporation**, 924 Twenty-second Street, Sacramento, California, a subsidiary of the Rustless Iron and Steel Company of Baltimore, has entered into an agreement with the **United States Chrome Mines, Inc.**, A. H. Wild, president, Russ Building, San Francisco, under which the latter's properties in El Dorado County near Folsom, California, will be operated by the Rustless corporation for the next two years. Under the new management, the capacity of the milling plant in El Dorado County will be increased from 200 tons to 400 tons daily. H. F. Byram, vice-president of the Rustless Mining Corporation, will be in active charge of operations at the mine and mill. The mailing address for the El Dorado County property is Box 214, Folsom, California. The United States Chrome Mines, Inc., has extensive interests in chrome properties in eight other counties in California and two coun-

ties in Oregon. It is planned to install a concentrating plant at the San Luis Obispo County property early in the new year, and at a later date the remaining properties will be brought into active operation. The chrome company estimates a possible production from all its properties of 80,000 to 100,000 tons of concentrates, carrying a chromic oxide content of over 4 per cent.

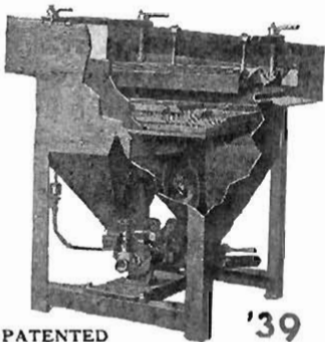
The mill and equipment at the App shaft of the **Dutch Consolidated Mines**, Roy K. Brown, superintendent, Jamestown, California, have been moved to the Dutch shaft, where they have been set up, with the addition of some new machinery. The 60-ton mill is all gravity flow, with the exception of the step from the jaw crusher to the ball mill, and the plant has been running three shifts daily. Underground work is confined largely to the 600-foot level where a drift is being extended to open up ore bodies under the 300-foot level of the abandoned App shaft. The water in the Dutch shaft is lower than usual and an impounding dam is being built to conserve the available water for mill use. A crew of 23 men is employed. Dutch Consolidated Mines is a subsidiary of Allied Mines, Inc.

The **Winfield Trust**, Henry R. Sanborn, president, Salyer, California, has secured options on the McKnight and White properties near Burnt Ranch, and this ground will be added to the block of gold-bearing gravel property which the trust is acquiring with a view to establishing an extensive placer operation. Drilling is to be started before the first of the year. It is understood that the water rights available to the McKnight properties are sufficient to provide an ample supply of water for both hydraulic and dredging operations.

The **Sacred Mound and Butte Saddle** mines near Sierra City, California, are reported to have been leased by A. A. Woods of New York, who is said to be planning an extensive program of operations for the coming spring. A new road is to be built to the property under his supervision and Woods is also said to be installing a 50-ton mill in Nevada County to handle ore from the mine. The plant will be enlarged as the mine development warrants. The two properties are owned by Mrs. Richard Phelan of Sierra City.

GET HIGHEST RESULTS WITH YOUR RECOVERY SYSTEM

TITAN IMPROVED
TWIN DIAPHRAGM JIG



PATENTED

'39

WITH YOUR RECOVERY SYSTEM

TRADE MARK
REGISTERED

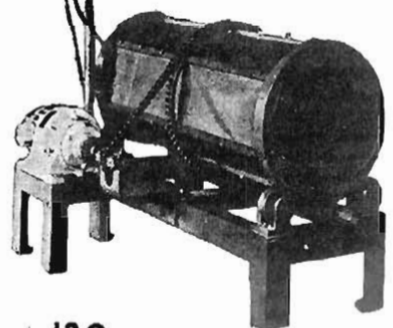


MILL & MINE SUPPLY, INC.

Manufacturers

2700 4th Ave. So., Seattle, U.S.A. Cable Address "Millmine"

TITAN CONTINUOUS
ROTARY AMALGAMATOR



PATENTED

'39

The Mohawk copper-gold-silver property at Clio, Plumas County, California, has been taken over under lease and option by W. F. Gray, 1147 East Fourth Street, Reno, Nevada, and associates, and preparations are being made for active development. A new company, to be known as the **Big Mohawk Mining Company**, is being organized to operate the mine. John Veak, who has owned the property for some 20 years, is to be a member of the board of directors of the new firm. The first work scheduled is the driving of a 1,000-foot tunnel for the purpose of cutting the ore channel at a depth of 600 feet.

A crew of several men is engaged in mining ore at the old **Conzetti** mine on the South Fork of the Salmon River 10 miles from Cecilville, California. The property is equipped with a rod mill, which replaces the old stamp mill previously operated. Assays on the ore are said to give high returns. The mine was taken over some time ago by A. Mills of Cecilville.

The **Hasloe** mine 18 miles east of Coulterville, California, is under option to a San Francisco group, who are considering an extensive program of development for the property. The mine is owned by W. D. McLean, D. J. Jacobs, and R. S. Hudson, all of Coulterville, who have been operating it for the past five years. A large amount of development work has been done and a considerable tonnage of ore has been treated in the small, two-stamp mill on the property.

Plans have been announced for complete reconstruction of the hydroelectric plant of the **Utica Mining Company** at Angels Camp, California, and for installation of a new 8,700-foot pipe line. The announcement was made by Howard Dyanan, resident superintendent, who stated that work will begin as soon as plans and specifications have been drafted. The present plant, built many years ago and remodeled in 1920, will be dismantled following completion of the new plant. The present Diesel stand-by plant, installed about four years ago, will be retained. To be constructed just north of the existing buildings, the new plant will have a total capacity of 1,500 kilowatts as compared with the 550-kilowatt capacity of the present plant. Preliminary work has been completed and materials have been ordered for construction of the new pipe line, which will replace three lines now supplying water for the power plant and for domestic use. The pipe line will be of 36-inch, welded-steel pipe and will be laid in a concrete saddle to facilitate repairs and repainting. Installation of the line will be done under contract. The Utica company formerly carried on extensive mining operations in the Angels Camp district, but in more recent years has entered the power and water utility field.

Active operations are in progress at the **Herndon** mine on the Klamath River near Yreka, California, following diversion of the Klamath River to a by-pass. The diversion leaves a quarter of a mile of the stream bed available for mining. Equipment includes a 1½-yard power shovel

and a 1¼-yard auxiliary, a fleet of Ford and Autocar trucks, and a stationary washing plant. The property is being developed by William Von der Hellen of Medford, Oregon. Headquarters for the project are at Yreka. Von der Hellen is also associated with Edward F. Webber in mining operations on Humbug Creek near Herndon Bar. A dragline and dredge with a capacity of 3,500 yards a day are being used on that project.

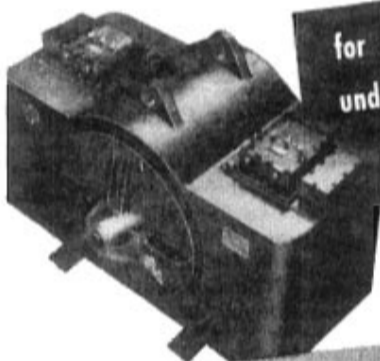
Operations have been resumed at the property of **Rainbow Mines, Inc.**, Pine Grove, California, under the direction of Cameron L. Evans, vice-president and general manager. The shaft is being retimbered, and a new shaft is being sunk 200 feet from the old workings. Future plans

call for the installation of electrical power and a milling plant.

The **French** mine near Bear Valley, California, is under lease to Bob Sharp and Pat Cruickshank who are reported to have encountered ore sampling as high as \$180 per ton in an east drift of the 120-foot shaft. The mine is being leased from the **Pacific Mining Company**.

Installation of a jig and two flotation cells is planned before milling operations are started at the **Texas Hill** mine, Coulterville, California. Development is continuing and a doublespan, gravity tram, 2,200 feet long, transports ore from the mine to the 10-stamp mill. The mine is operated by W. J. Beatty and O. E. Crouse.

ANNOUNCING A NEW G-E Totally Enclosed Motor



for driving your larger mining equipment
under the toughest operating conditions

HERE IT IS

A G-E totally enclosed, self-ventilated, sleeve-bearing motor with surface coolers that solves the problem of driving your larger mining equipment continuously and economically under the toughest conditions of heat, dust, and moisture.

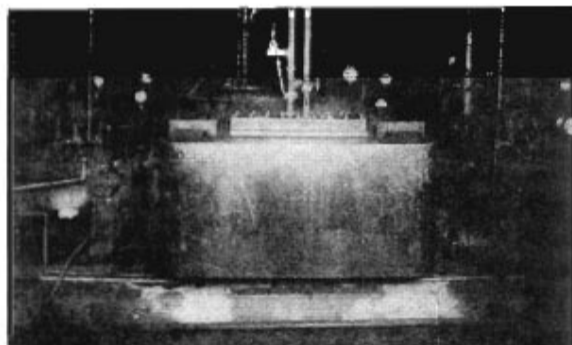
A TYPICAL INSTALLATION

3800 feet underground, where conditions of heat and moisture make severe demands on electric equipment. This G-E 3600-rpm motor is driving a centrifugal pump in a Western mine.

- NOTE THE FEATURES OF THIS MOTOR
1. Cast-iron, corrosion-resisting enclosure, of unit construction, completely protects the internal parts.
 2. Closed ventilating system with surface air coolers.
 3. Can be furnished in any standard speed.
 4. Can be furnished in any size desirable.
 5. Standard oil-ring lubrication system.
 6. Unusually quiet in operation.

YOU can install this motor where the air is filled with dust, where it's hot, or where it's good and wet, and know that it will give you year after year of dependable, low-cost service.

Perhaps right now there are some spots at your mine where this G-E motor would be just the type to install. Why not consult our nearest representative? General Electric Company, Schenectady, N. Y.



GENERAL ELECTRIC

The mill at the **Oaks and Reese** mine, Hornitos, California, is being operated intermittently on development ore. A power shovel has recently been added to the equipment at the mine. Milton Sutherland of Atwater, California, is in charge.

The **Barker Corporation**, Glenn Bump, president, is carrying on dragline operations six miles east of Chinese Camp, California. Equipment includes a Judson-Pacific floating type dragline and a Northwest shovel with a two-yard bucket. The plant is electrically operated throughout. Eleven men are employed on a three-shift basis.

The **Central Eureka Mining Company**, C. C. Prior, president, 111 Sutter Street, San Francisco, California, has declared a year-end dividend of 5 cents a share on its capital stock, payable December 15 to stock of record December 6. This will bring total dividends for the year to 45 cents a share, as compared with 40 cents in 1938. The company also announced a bonus of \$60 for employes with terms of service aggregating a year or more and proportionate sums for those employed for less than a year.

High-grade ore which is being shipped to the Salt Lake smelter from the **Colombo** mine, Sierra City, California, is reported to be running between \$90 and \$120 in gold. Eight men are employed at the property under the direction of R. D. Compton, operator. It is understood that the property will be put on a larger producing scale next spring. The mine had been closed for a number of years prior to its reopening about two years ago by Compton.

The shafts at the **Cuddeback** quicksilver mine west of Tehachapi, California, are being retimbered preparatory to a resumption of active mining operations by the **Walabu Mining Company**. Percy Blodget, president, Rosamond, California. A crew of six men is employed under the direction of Perry Taylor. The property is equipped with a 50-ton rotary furnace.

Work is progressing on the new structure which is being built at Nevada City, California, for the **Miners' Hospital Association**, a non-profit organization financed by the **Empire Star Mines Company, Ltd.** The new hospital is expected to be ready for occupancy about February 1. Membership in the association is available to employes at a fee of \$1.25 a month.

COLORADO

The Hart group covering about 30 acres at Cripple Creek, Colorado, has been purchased by the **Cresson Consolidated Mining and Milling Company** from the estate of Eugene P. Shove. The property adjoins the Isabella mine on the north slope of Bull Hill. Merrill E. Shoup, Box 86, Colorado Springs, is president and A. H. Beebe, Cripple Creek, is general superintendent.

The **Burleson Mines, Inc.**, is reported to have completed installation of a 50-ton milling plant at the Raymond mine in the Gold Brick mining district near Ohio City, Colorado. S. E. Burleson of Salida is president and general manager. Mine development is progressing and is carried on through the Raymond tunnel.

The **Mytus Gold Corporation** has been organized to acquire and operate the properties of the **Lucky Discovery Gold, Inc.**, the **Colorado Gold, Inc.**, the **Commonwealth Gold, Inc.**, and the **Trail Lease, Inc.** K. M. Ohlander, 315 Colorado Building, Denver, is president. The properties are located in the Cripple Creek district, except for the **Lucky Discovery** ground which includes the **Lucky Moon**, **Sun Up**, and other claims in La Plata County; the **National** mine in Gilpin County; and the **East Tennessee** claims in Lake County. Work will be started on the **Commonwealth** mine, which is said to be well equipped and in good condition. The **Colorado City**, which is the **Colorado Gold** holding, adjoins the **Trail** mine. The **Colorado City** shaft has been reconditioned and is now being extended. Later these workings will be connected with those of the **Trail** mine.

According to reports, J. Price Briscoe of Fairplay, Colorado, and associates have organized the **Conqueror Operating Company** to take over and operate the **Conqueror** mines near Empire in Clear Creek County, Colorado. The property was formerly held by the **Viking Gold Mines Corporation**, Carney Hartley, 3839 West Forty-sixth Avenue, Denver, vice-president and general manager. The **Humboldt** mill is being adjusted to make a continuous run

on **Conqueror** ore, test runs having been made successfully in the plant.

The **London Butte Gold Mining Company** is reported to be paying interest on its dividend notes and extending the principal payment to a date to on or before another year. Total outstanding is stated to be \$37,800. Holdings comprise the **Butte** mine and mill in Park County near Alma, Colorado. W. D. Leonard, 529 Equitable Building, Denver, is president and George L. Schreiber is general manager.

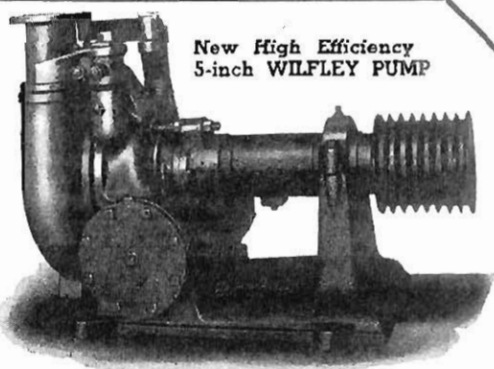
The old **Fargo** silver mine a half mile west of Silver Plume, Colorado, in Gilpin County is being reopened by T. W. Orr of New York and associates. O. Barlow Willmarth of Georgetown, who has been agent for the **Fargo** estate of Chicago for some years, is the engineer in charge. The old trail to the mine will be rebuilt and a 50-foot crosscut will be run to undercut an old stope. The crosscut will be an extension of the old **Jane** tunnel and will cut the **Fargo** vein at a depth of 150 feet. R. A. Patterson, Sr., and Jr., of Georgetown will do the crosscutting under contract.

Ed Hollowfield and George Perine of Nederland, Colorado, are operating the **Hoosier** tungsten mine in Boulder County between Nederland and Lakewood. Commercial ore is stated to be opened in the property, which has been a producer in the past.

According to reports, the **Shenandoah-Dives Mining Company** is planning to open an undeveloped area about 150 feet below present workings at Silverton, Colorado. Work will be started the first of the year. Charles Chase of Silverton is general manager.

The **More Minerals Mining and Milling Corporation**, A. B. More of Wallstreet, Colorado, general manager, is operating its mill intermittently to treat ore from its **Orphan Boy** in the **Copper Rock** district of Boulder County. A limited amount of work is being done in the **Orphan Boy**.

C. Clark is reported to have sold his interest in a lease on the **Washburn** mine to his partners, Shaw and Lowery. The property, located in the **Sunshine** district of Boulder County, Colorado, is owned by O. A. Johnson, Boulder attorney. Clark



A. R. WILFLEY & SONS, Inc.
DENVER, COLORADO
New York Office: 1775 Broadway, New York, N. Y.

MORE Efficiency

means Lower Costs

A completely new standard of EFFICIENCY is created by the new 5-inch WILFLEY pump illustrated at left. Like ALL Wilfleys, this pump will deliver a highly efficient, continuous performance, 24 hours a day without attention. It eliminates costly delays caused by shutdowns. It's the pump to buy if you want to reduce COSTS. Write for complete details.

WILFLEY

centrifugal SAND PUMPS

PATENTED

The Tintic Standard Mining Company has declared a dividend of 10 cents a share to stock of record December 12, payable December 23, 1939. The disbursement amounts to \$115,332 and brings the company's total payments for the current year to \$374,826. James N. Wade, Walker Bank Building, Salt Lake City, Utah, is president and general manager.

Two dividends on common stock were declared recently by the U. S. Smelting Refining and Mining Company, 75 Federal Street, Boston, Massachusetts. One is for \$1.50 a share, payable December 22 to stock of record December 14; and the other is for \$1, payable January 15, 1940, to stock of record December 14. The company previously paid four \$1 dividends this year. For the 10 months ended October 31, 1939, the company reports an estimated consolidated net profit of \$4,250,625 after federal income taxes, depreciation, depletion, amortization, etc. This is equal, after dividend requirements on 7 per cent preferred, to \$5.46 a share.



Four men are employed by Ben Hofer of Northport, Washington, at the Bechtol mine where 12 feet of lead ore are stated to have been opened. The property is about seven miles east of Northport and

is held by Hofer under lease from the Bechtol brothers who have worked the mine intermittently for years.

A 20-ton mill has been installed at the Cleveland mine in Stevens County 18 miles west of Springdale, Washington. Kellogg, Idaho, people are understood to be re-opening the property and equipping it for production. Values are in antimony, lead, and zinc. Joe and Clarence Carr of Clayton, Washington, operated the mine until recently.

The Golden Valley, Inc., is a new company with James W. Gerard, 551 Fifth Avenue, New York, as president and B. N. Sharp, vice-president and engineer. The company will operate the Valley mine, comprising three claims at Curlew Lake north of Republic, Washington. A 100-foot shaft has been sunk in the property and this will be extended another 100 feet, and drifts will be run from the bottom. Last summer Everett and I. B. Hougland of Republic, who had reopened the mine, shipped ore to the Tacoma smelter.

Exploration work with a crew of five men is to be carried on throughout the winter months by the Kettle River Gold Mining Company at its White Elephant mine five miles north of Orient, Washington. The 200-foot shaft has been unwatered for the first 100 feet and work will be continued to the 200 level. Greater depth may be attained also by drifting into the mountain. Fred Menke is superintendent and Samuel B. Holbert, 2001 First, Spokane, is president.

TIMBERLAND STEALS IN CALIFORNIA

(Continued from Page 7)

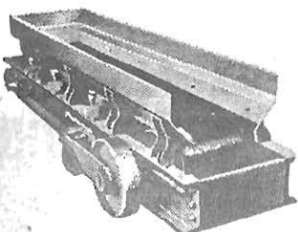
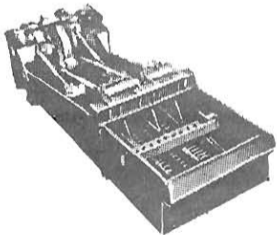
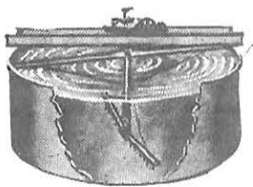
much of which has never been logged, and probably never will be because of its inaccessibility—pays less than \$1,000 a year taxes, although asking from \$50 an acre up for its land. Sugar pine timber is taxed at \$3.50 per thousand. In a first-class stand, an acre will scale 100,000 board feet. A-1 sugar pine lumber sells for \$80 per thousand, f.o.b. the mill. It costs between \$8 and \$15 per thousand to log and saw it.

The restoration of these hundreds of thousands of acres of unexploited mineral lands to the right of mineral entry would not only restore California's mining to its rightful place in the Sun, but it would have the immediate benefit of taking hundreds of men off the relief rolls and placing them at productive work in operating mines—not to mention the hundreds of others who would be enabled to earn a living as active prospectors.

One logical attack is through a redistribution of local taxes, making the rate on non-productive, unused, so-called non-mineral land so high that it will be unprofitable for speculators to hold it as such. This can be done despite the mental gymnastics of modern jurisprudence, for the fact that "private ownership is only by right of public consent" is as true today as when Blackstone first wrote it.

Another WEMCO Service.....

We RENT Mining and Milling Equipment



OR if you need COMPRESSORS or other AIR EQUIPMENT, this is also available to you on a RENTAL BASIS. This feature of WEMCO SERVICE has proved of inestimable advantage to individuals or companies either just going into operation or desiring to broaden the scope of their present activities.

Our RENTAL EQUIPMENT . . . whether mining, milling or air equipment . . . is thoroughly dependable. It is in first class condition . . . carefully tested and fully guaranteed to render the highest type of service.

Learn about our "Option to Purchase Plan"

Through it you are enabled to apply a large portion of the amount you have paid in rent toward the purchase price of the equipment you are renting.

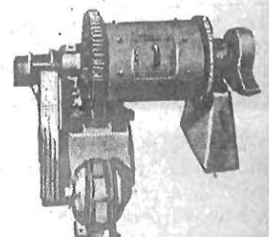
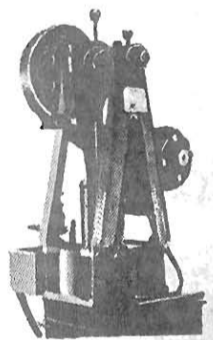
Write us regarding your requirements, and we will give them prompt attention.

760-62 Folsom Street, San Francisco, Calif.



FOR OVER 25 YEARS A SYMBOL OF SERVICE AND SAVINGS TO INDUSTRY

BRANCH OFFICES: Sacramento, Salt Lake City, Denver, Phoenix, Spokane and Los Angeles



**COMPENSATION INSURANCE
RATES DROP IN CALIFORNIA**

NEW schedule of compensation rates, following substantial reductions on both old and renewal policies, has been announced by A. Caminetti, Jr., California insurance commissioner, effective January 1, 1929.

Rates have been reduced in all of the principal classifications except that of surface employees at lode mines, the rate for which has been increased from \$3.92 to \$4.24, a rise of 40 cents.

The most substantial decrease is in the rate for underground employees, amounting to \$1.09, which will bring the rate down to \$2.89.

A schedule of the old and new rates based on each \$100, is as follows:

	Old Rate	New Rate
Underground	\$9.17	\$8.89
Surface, placer	4.27	4.24
Surface, lode	3.92	4.32
Smelting	2.21	1.97
Ladder dredging	3.99	3.96
Machine dredging	5.40	4.31

**ALHAMBRA-SHUMWAY PAYS
100 PER CENT IN DIVIDENDS**

SHAREHOLDERS of the Alhambra-Shumway Mines, Inc., Kelsey, California, received a 50-cent Christmas dividend on stock which has a par value of \$1.00. Previous dividends of 10 cents each for 30 cents make a total return of 100 per cent for investors in 1928.

The Alhambra mine, in which exceptional-grade ore was encountered a few years ago, has already produced more than 1,000 tons and is expected to continue to produce for some time. The property, owned by the Shumway mine, was taken over two years ago by the present management and extensive development work is being done on the mine before the high-grade ore is exhausted in the Alhambra, and it will then be acquired under bond and operated by G. O'Hanlon of San Francisco.

The Alhambra is equipped with a 25-horsepower mill which is handling about 100 tons daily. Thirty men are employed and is used for recovery of the heavy concentrates, while the material is worked in an amalgam mill and is shipped to the smelter at Phoenix. A pumping plant was recently installed on Traverse Creek, and a pipeline brings water to the 10-mile spur line provides buildings recently erected including a hoist house, mill building, and several residences.

The Alhambra and Shumway mines were discovered 10 years ago by William



**Unfortunately
Grinding Balls Do
Not Grow On Trees**

And you can't crush ore with coconuts. So, Philippine Islands mining men get grinding balls from American Forge Company, and join the mining world in reporting—"LESS LOSS OF GRINDING STEEL PER TON OF ORE CRUSHED." Special analysis steel—makes "American" the finest grinding ball you can procure. Your order for any quantity can be filled immediately out of stock. Sizes from 3/4" to 6".

**FORGED STEEL GRINDING BALLS
★ AMERICAN FORGE CO. ★**

331 1/2 First Ave. South
Seattle, Washington

750 Potter Street
Berkeley, California

1525 E. Washington Blvd.
Los Angeles, California

SAVE MONEY . . . RECLAIM BY WELDING

11 TO 14% MANGANESE STEEL

CRUSHERS—JAWS—ROLL SHELLS—MILL LINERS
DIPPER TEETH, SHEAVES, ETC.

WITH

MANGANAL

Trade Mark Reg. U. S. Patent Office

11 TO 13 1/2% MANGANESE NICKEL STEEL
WELDING ELECTRODES—WEDGE AND APPLICATOR BARS

DISTRIBUTED BY

Pratt-Gilbert Hardware Co. Phoenix, Arizona

EFFICIENT DRAGLINE DREDGING

Judson-Pacific floating dredges and land plants are designed with necessary strength and mechanical simplicity to operate efficiently and pay dividends for years.

JUDSON-PACIFIC



INSURANCE RATES DROP IN CALIFORNIA
 A schedule of compensation rates, following substantial reductions on both renewal policies, has been announced by A. Caminetti, Jr., California commissioner, effective January

have been reduced in all of the classifications except that of surface employees at lode mines, the rate for which has been increased from \$3.92 to a rise of 40 cents.

A most substantial decrease is in the rate for placer mines, the reduction, amounting to \$1.09, will bring the rate down to \$2.83. A schedule of the old and new rates on each \$100, is as follows:

	Old Rate	New Rate
Surface	\$9.17	\$8.89
Placer	4.27	4.24
Lode	3.92	4.32
Quarry	2.21	1.97
Under dredging	3.99	3.96
Over dredging	5.40	4.31

ALHAMBRA-SHUMWAY PAYS 100 PER CENT IN DIVIDENDS

HOLDERS of the Alhambra-Shumway Mines, Inc., Kelsey, California, received a 50-cent Christmas dividend on stock which has a par value of \$1. Previous dividends of 10 cents each for 30 cents make a total return of 100 per cent for investors in 1931.

The Alhambra mine, in which exceptional-grade ore was encountered a year ago, has already produced more than 100 and is expected to continue for some time. The property, the Shumway mine, was taken over two years ago by the present owners after extensive development work on before the recent strike.

The Shumway was dropped before the high-grade ore was mined in the Alhambra, and it was acquired under bond and O'Hanlon of San Francisco. The mine is equipped with a 25-ton mill which is handling about 100 tons daily. Thirty men are employed for recovery of the heavier concentrates, while the tailings are worked in an amalgam plant and shipped to the smelter. A pumping plant was built on Traverse Creek, and a line brings water to the mill. A mile spur line provides for the recently erected industrial house, mill building, several residences.

The Alhambra-Shumway mines were purchased years ago by Wilber E. ... bought them to the ... leasing ...

... present ... He also owns the ... district and has re- ... property to ...



Unfortunately Grinding Balls Do Not Grow On Trees

And you can't crush ore with coconuts. So, Philippine Islands mining men get grinding balls from American Forge Company, and join the mining world in reporting—"LESS LOSS OF GRINDING STEEL PER TON OF ORE CRUSHED." Special analysis steel—makes "American" the finest grinding ball you can procure. Your order for any quantity can be filled immediately out of stock. Sizes from 3/4" to 6".

FORGED STEEL GRINDING BALLS ★ AMERICAN FORGE CO. ★

3318 First Ave. South
 Seattle, Washington

750 Potter Street
 Berkeley, California

1825 E. Washington Blvd.
 Los Angeles, California

SAVE MONEY . . . RECLAIM BY WELDING

11 TO 14% MANGANESE STEEL

CRUSHERS—JAWS—ROLL SHELLS—MILL LINERS
 DIPPER TEETH, SHEAVES, ETC.

WITH

MANGANAL

Trade Mark Reg. U. S. Patent Office

11 TO 13 1/2 % MANGANESE NICKEL STEEL
 WELDING ELECTRODES—WEDGE AND APPLICATOR BARS

DISTRIBUTED BY

Pratt-Gilbert Hardware Co. Phoenix, Arizona

EFFICIENT DRAGLINE DREDGING

Judson-Pacific floating dredges and land plants are designed with necessary strength and mechanical simplicity to operate efficiently and pay dividends for years.

JUDSON-PACIFIC COMPANY

1200 Seventh



Market Street
 SAN FRANCISCO, CALIFORNIA

**COMPENSATION INSURANCE
RATES DROP IN CALIFORNIA**

A NEW schedule of compensation rates, allowing substantial reductions on both new and renewal policies, has been announced by A. Caminetti, Jr., California insurance commissioner, effective January 1, 1940.

Rates have been reduced in all of the principal classifications except that of surface employes at lode mines, the rate for which has been increased from \$3.92 to \$4.32, a rise of 40 cents.

The most substantial decrease is in the dragline rate, and the reduction, amounting to \$1.09, will bring the rate down to \$4.31. A schedule of the old and new rates, based on each \$100, is as follows:

	Old Rate	New Rate
Underground	\$9.17	\$8.89
Surface, placer	4.27	4.24
Surface, lode	3.92	4.32
Ore milling	2.21	1.97
Bucket ladder dredging	3.99	3.96
Dragline dredging	5.40	4.31

**ALHAMBRA-SHUMWAY PAYS
100 PER CENT IN DIVIDENDS**

STOCKHOLDERS of the Alhambra-Shumway Mines, Inc., Kelsey, California, received a 50-cent Christmas dividend on their stock which has a par value of \$1. Two previous dividends of 10 cents each and one for 30 cents make a total return to date of 100 per cent for investors in the project.

The Alhambra mine, in which exceptionally high-grade ore was encountered a few months ago, has already produced more than \$750,000 and is expected to continue at that pace for some time. The property, along with the Shumway mine, was taken over about two years ago by the present company, and extensive development work was carried on before the recent strike. The lease on the Shumway was dropped about 30 days before the high-grade ore was encountered in the Alhambra, and it has since been acquired under bond and lease by H. G. O'Hanlon of San Francisco.

The Alhambra is equipped with a 25-ton Straub mill which is handling about 20 tons of ore daily. Thirty men are employed. A jig is used for recovery of the free gold and heavier concentrates, while high-grade material is worked in an amalgam barrel or is shipped to the smelter without treatment. A pumping plant was installed recently on Traverse Creek, and a 2,500-foot pipe line brings water to the project. A two-mile spur line provides power. New buildings recently erected include an office, hoist house, mill building, change room, and several residences.

The Alhambra and Shumway mines were acquired about 10 years ago by Wilber E. Timm who had brought them to the producing point before leasing to the present operating company. He also owns the Atlanta in the same district and has recently leased that property to Clarence Brown, M-G-M motion picture executive.

Alhambra-Shumway Mines, Inc., has also taken a lease and bond on the Fred Veerkamp property at Garden Valley, California, and a small crew is engaged in open-



**Unfortunately
Grinding Balls Do
Not Grow On Trees**

And you can't crush ore with coconuts. So, Philippine Islands mining men get grinding balls from American Forge Company, and join the mining world in reporting—"LESS LOSS OF GRINDING STEEL PER TON OF ORE CRUSHED." Special analysis steel—makes "American" the finest grinding ball you can procure. Your order for any quantity can be filled immediately out of stock. Sizes from 3/4" to 6".

**FORGED STEEL GRINDING BALLS
★ AMERICAN FORGE CO. ★**

3315 First Ave. South
Seattle, Washington

750 Potter Street
Berkeley, California

1523 E. Washington Blvd.
Los Angeles, California

SAVE MONEY . . . RECLAIM BY WELDING

11 TO 14% MANGANESE STEEL

CRUSHERS—JAWS—ROLL SHELLS—MILL LINERS
DIPPER TEETH, SHEAVES, ETC.

WITH

MANGANAL

Trade Mark Reg. U. S. Patent Office

11 TO 13 1/2 % MANGANESE NICKEL STEEL
WELDING ELECTRODES—WEDGE AND APPLICATOR BARS

DISTRIBUTED BY

Pratt-Gilbert Hardware Co. Phoenix, Arizona

EFFICIENT DRAGLINE DREDGING

Judson-Pacific floating dredges and land plants are designed with necessary strength and mechanical simplicity to operate efficiently and pay dividends for years.

JUDSON-PACIFIC COMPANY

1200 Seventeenth Street
SAN FRANCISCO, CALIFORNIA

PAN-AMERICAN ENGINEERING COMPANY

MANUFACTURERS: Placer and Pulsator Jigs, The Multi-Stage Flotation Machine, Kraut Flotation Machine, Reagent Feeders, Dewatering Cones and Drags, Oil Burners for Industrial Use and Heating.

CONSULTING ENGINEERS: Metallurgical Testing and Field Consulting Service on ores and in mills and in connection with Placer Recovery Methods.

820 PARKER STREET, BERKELEY, CALIF., U. S. A. CABLES: "PANCO"

