

## PROCESS BOON TO MINERS

### SAN FRANCISCO CHEMISTS HAVE NOVEL METHOD

Promoters Say Plan for Refining Gold Will Revolutionize Manner of Dealing With Ore.

A process has been discovered by a number of San Francisco chemists for the refinement of gold which they claim will revolutionize the methods of mining and taking care of ore. A company has been formed with F. J. Abbott as president. Mr. Abbott has just returned to Los Angeles from New Mexico, where he went with a number of miners to investigate mines.

He states that the new process will be a boon to miners for the reason that much of the ore that is now thrown away can be saved and the gold extracted from it. Not only this, but the new company does its smelting with machines located on the ground with the mines and change the ore into bullion without any cost of shipping.

Mr. Abbott says: "By this process the ore as it is taken from the ground is put into a large revolving oven and heated to a temperature that varies with the nature of the metal and different chemicals, the formula of which are kept secret, are shot into it with steam. It is claimed that in this manner gold can be taken from ore that heretofore was worthless; also that the most refractory ores can be desulfurized and oxidized within two hours' time, whereas the methods now in use consume sixty hours for the same process in treating any ore. When this refractory ore is taken from the oven it is so decomposed that it is in condition to be treated by any other method for the recovery of the gold.

"If this method proves satisfactory it will supply a long felt need of the Nevada miners. They have heretofore sent their ore to Salt Lake City to the smelters, but these smelters have given them notice that they are so crowded with work that they can only take one-third of the ore that they have been receiving before.

"There would also be a great saving of freight charges on account of a plant being erected on each mining property and would cause many abandoned mines to become valuable by providing a means whereby the refractory ore contained in them could be successfully treated."

#### Fire Destroys Mining Plant.

Dayton, Nev.—Fire broke out in the engine house at the Logan mine, one of the properties of the Ohio-Tonopah Mining Company, at Como, last Friday morning at 6 o'clock, and destroyed the engine house and blacksmith shop. The loss is estimated at \$5,000; no insurance. The fire caught from a lantern in the hands of the engineer. Five tanks of gasoline stored in the building prevented any attempt to save the property.

#### Benefactors of Humanity Who Were Rewarded With Nobel Prizes.

Stockholm.—The Nobel prizes, which were awarded Monday, included the following:

Physics, Philip Lenard, professor at Kiel University, for researches into cathode rays.

Chemistry, Adolph von Bösser, professor at the University of Munich, for researches leading to the evolution of organic chemistry and the development of the chemistry industry.

Medicine, Prof. Robert Koch of Berlin, for researches looking to the prevention of tuberculosis.

Literature, Henryk Sienkiewicz.

Each prize amounts to about \$10,000.

The awards were distributed at the Royal Academy of Music.

King Oscar made the presentations.

#### Sailors Join Boycott.

San Francisco.—The anti-American boycott has reached this port. It is the custom of the Pacific Mail Company to allow peddlers and small dealers on board their China liners during the luncheon hour for the convenience of the Chinese sailors, firemen, cooks, and waiters, who by reason of the exclusion, may not do their shopping ashore.

When the Manchuria docked notices in Chinese were tacked up all over the ship. These notices called attention of the Manchuria's crew to the existence of a boycott against American goods and forbade them to buy any wares offered for sale on the liner's decks during her stay in this port. So far the Manchuria's Mongolians have followed the edict of the boycott notice to the letter and the dealers have abandoned their efforts to trade with them.

#### Great Work Done by Life Savers.

Washington.—The report of the life saving service for the fiscal year ending June 30, shows the operations on the Pacific Coast as follows:

Thirteenth district—Number of disasters, 55; value of vessels, \$815,900; value of cargoes, \$48,230. Total value of property, \$864,130.

Number of persons on board, 410; number of persons lost, 5; number of shipwrecked persons succored at station, 15.

Number of days succor afforded, 23. Value of property saved, \$802,160. Value of property lost, \$61,970.

Number of disasters involving total loss of vessels, 3.

## REUSING WATER

### PROCESS OF USE IN MILLING OPERATIONS

Subject of the Greatest Importance to Miners in the Desert—Gas Engines Save Enough For 48 Stamps.

The following letter from Mr. Paul Johnson, of the Quartette Mining Company, Searchlight, Nevada, to the editor of The Searchlight, may be of interest to all engaged in mining:

Dear Sir—This is a subject the importance of which is only second to that of finding water at all in the desert regions, and it would seem from the many reports of shortage of water in various sections of the country from Arizona to Northern California that the development of water in sufficient quantities for milling purposes is becoming quite as important as finding ore of the precious metals. Therefore, it behooves mining men to discuss and improvise ways and means for reusing the water as often as possible in milling operations.

The passing of the steam engine, through the use of gas engines in some districts, Searchlight being a notable one, marks a decided step in saving of water for metallurgical purposes. By a few simple computations may be shown how much water, approximately, is saved in this district for the use of stamps by this change of power.

The unit of water used per horse power in high pressure non-condensing steam engines is taken at one cubic foot per hour.

The gas engines now actually running in the Searchlight district represent 328 rated horse power. If steam engines of the same power were used, 328 cubic feet of water per hour would be required, or, at 20 hours a day, actual running time 6,560 cubic feet, equivalent to 49,200 gallons a day, exhausted into the air as steam and so lost.

It has been found by experiment that for ores containing much mud, as in this camp, about 3,000 gallons of water are required by each stamp during twenty-four hours. The 49,200 gallons saved by the use of gas engines would, therefore, suffice to run sixteen or more stamps, on average ore, continuously, if that water were to be used once only. By means to be described later, it is possible to make this water do duty three times. The use of gas engines thus saves to the district the means to run forty-eight stamps continuously.

For economical use, and also for saving water to be reused, several schemes are available.

In plate amalgamation it is possible to run with less water by setting the plates steeper than would be done were there a plentiful supply; this somewhat to the detriment of good amalgamation, however.

Another scheme, worked very successfully where the earth is of a clayey nature, is to select a canyon or gulch for running the tailings into, depositing them in such a manner as to form a dam with the heavy sand, allowing the water to be retained in the upper end in a lake, from which it is pumped back to the mill. I once ran a 20-stamp mill, using this plan, and there was no trouble in maintaining a lake thus made containing several hundred thousand gallons constantly, of clear water, all of which was pumped through a two-inch pipe for nine miles, besides supplying water for all camp uses and for ten or twenty head of horses. This plan seems to be a failure here owing to the absorbent properties of the soil.

I recall another case where we had enough water from the mine to run our ten-stamp mill from seven in the morning until four in the afternoon and by reusing from a small pit into which the clear water was led, it was possible to run continuously.

Much of the water was caught in a well sunk below the pond and used over. Each of these plants was run by a steam engine.

A better saving of water is made by a system of settling tanks, of which there are several forms, the chief object being to bring the sand and water to rest long enough to allow the lighter material, held in suspension, to sink to the bottom, when the water is pumped from the top through a floating suction pipe. The size of such a plant is dependent upon the amount of slimes contained, hard quartz requiring only two tanks, while ores containing much slimes require from six to ten, arranged in two systems to be used alternately.

Another result is obtained by using any of these plans, which is that of separating the sands and slimes, a very important matter when cyaniding the sands, there being much better circulation and draining of the solutions.

The slimes being by themselves, can be treated by some one of the agitation processes, should they assay high enough to warrant it.

PAUL J. JOHNSON.

#### To Develop Mexican Lands.

El Paso, Tex.—Development of nearly one-quarter of a million acres in the State of Durango, Mex., is the purpose of the company backed by Memphis, Tenn., capital, which has been organized under concessions from the Mexican government. The company is named the American-Mexican Investment Company. The property just acquired by the company is timber land. The company was organized some time ago, but its large holdings in Durango have just been secured. Sawmills will be erected and operated in different parts of Mexico, and lumber will be manufactured for general consumption within Mexico.

#### Italy Has a Surplus.

Rome.—Signor Palo Carcano, minister of the treasury, made his budget statement before the chamber of deputies, showing the good condition of Italian finances. Notwithstanding the heavy expenses sustained, the budget shows a surplus, and there is no need of an increase in taxation.

## WORK OF THE FLOOD

### MEXICAN COMMISSION INVESTIGATES GREAT IMPERIAL IRRIGATION WORK

Situation at Intakes Near Yuma is Serious—Four-Fifths of Mighty River Pouring Through Imperial Canal and Obliterating Its Banks.

Yuma (Ariz.) Dec. 9.—Early today President Randolph of the California Development Company arrived at Yuma from Tucson in his private railroad car to visit the scene of the dam works destroyed by last week's great flood. The wind was too strong to permit of a trip down river today, and the expedition was deferred until tomorrow. In consultation with Randolph are F. S. Edinger, consulting engineer, San Francisco; J. S. Tolin, engineer in charge of dam operations; W. W. Follett, consulting engineer, El Paso; J. D. Schuyler, Los Angeles, consulting engineer of California Development Company; C. R. Rockwood, assistant general manager; H. W. Blaisdell, vice-president. Views are also being exchanged with the Mexican government commissioners, headed by Gen. Pena, who visited the intakes yesterday, and who are investigating the situation in behalf of the Mexican government. This canal, although owned and managed by Americans, was chartered in Mexico, hence the interest of the Mexican government in naming the commission to investigate.

Col. Randolph, interviewed today, admits that all the temporary expedients to check the flow of the Colorado River into the Imperial canal are now little likely to succeed. However, careful investigation will be made, and any possible plan adopted. Meanwhile materials will be rushed in for the permanent headgate, a work which in any case would have been taken in hand right away. Randolph is confident that the canal, with a headgate constructed and river

levee built above and below the present break, will drain the Colorado River at low water and permit the earthwork dam to be completed, thereby sealing the cross-cut canal and eventually returning the river to the old channel. With the headgate ready by the first of April, there will be an interval of eight to ten weeks before the heavy summer flood. This usually begins early in June, but sometimes occurs late in May. Every thing, therefore, depends on results achieved between April 1st and the summer flood time. Meantime, nothing can reduce the flow of the river toward Salton sink. It was reported to me here today by a railway engineer that the water is rising at Salton at the rate of two inches per day. This shows that the flood of ten days ago has now reached the Salton sink. Col. B. C. Beatty, who has a long and close knowledge of the Colorado Delta, thinks that success will attend the headgate operations, but admits that the fight now must be a prolonged and costly one. However, with the Southern Pacific behind the Imperial undertaking, failure is impossible.

As showing delicate international complications it may be noted that the cross-cut canal that has caused all the trouble was made originally without the formal authority of the Mexican government. No Mexican engineer passed on the work before it was pushed through to meet last year's shortage of water in Imperial Valley. This is only one point of several.—Edmund Mitchell, in Los Angeles Times.

## JAPAN REJECTS LEATHER

### SKINS BREAK AS EASILY AS PAPER

Yankee of the Orient Proves Too Smart for a Thrifty Boston Manufacturer, Who Loses a Snug Sum.

San Francisco.—Japan wants no wooden nutmegs, and the trader of Down Eastern America will have to learn some new tricks before he can unload gold bricks upon the Yankee of the Orient. The anti-American boycott may have struck American trade in the Far East some heavy blows, but an enterprising firm of Boston tanners seems to have been responsible for an act of commercial hara-kari in the Japanese market that may work incalculable harm to this country's reputation in the Orient.

There is now being discharged from the liner Manchuria a large shipment of leather which was rejected by the Japanese government. There are 1,000 bales of this leather and it was sent to Japan from Boston, to which city it is being returned as fast as it can be loaded into freight cars.

Japan has been a large purchaser of leather since the beginning of her war with Russia and she has bought much of it in the United States. She paid a fair price and the American tanner reaped a rich harvest from the brisk trade developed by the war. Whole cargoes of leather have been shipped to Japan and it was this heavy demand which may have suggested to the mind of some thrifty tanner that in the rush the Japanese would not be too particular about quality.

The rejected leather now being transferred from the Manchuria to the freight cars tells its own story. It has been "acid tanned," say the experts, it does not require an expert to judge of its uselessness. As a substitute for cardboard it might serve if the weight were no objection, but for any purpose to which leather is put not a square foot of any roll in this shipment could be used. Bend it and it breaks. It is brittle as glass and not nearly so tough. The thickest of it can be torn like paper. Not even a patient Japanese cobbler could shape it into shoes and if by dint of much moistening he succeeded the leather would hold neither stitches nor nails long enough for the shoe to be marketed.

This is said to be the second shipment rejected by the Japanese.

#### Mexico Lacks Flour.

El Paso, Tex.—Mexico is facing a serious flour stringency despite the decision of the government to offer free entrance for the American product. It was hoped when the commission was made that large importations from the United States would be received, but up to this time such has not proved a fact.

#### To Fumigate Japanese Oranges.

Tacoma.—On account of their being infected with scales formed by a parasite dangerous to native fruit, State Horticultural Commissioner Huntley has ordered the local fruit inspectors to fumigate all Japanese oranges received at Puget Sound ports recently.

In the stock business, says the State Journal, "Nevada is coming to the front, not step by step, but by leaps and bounds, and the next few years will witness a growth and development, which, comparatively speaking, will be unequalled in the history of the country."

The Imperial Press says: "The government estimates forty acres of Arizona black ash trees to be worth \$100,000 at ten years of age and that it is the most useful for all around purposes of any tree that can be planted in this desert."

## NEW CABINET IS NAMED

### CAMPBELL-BANNERMAN MAKES APPOINTMENTS PUBLIC

Premier Has Audience With King, at Which His Majesty Approves the Selection of New Ministers.

London.—It is officially announced that the new British ministry is made up as follows:

Prime minister and first lord of the treasury, Sir Henry Campbell-Bannerman.

Chancellor of the exchequer, Herbert Henry Asquith.

Lord high chancellor, Sir Robert Threshie Reid.

Secretary of state for home affairs, Herbert John Gladstone.

Secretary of state for the colonies, The earl of Elgin.

Secretary of state for war, Richard Burdon Haldane.

Secretary of state for India, John Morley.

First lord of the admiralty, Baron Tweedmouth.

President of the board of trade, David Lloyd George.

President of the local government board, John Burns.

Secretary of state for Scotland, John Sinclair.

President of the board of agriculture, Earl Carrington.

Postmaster general, Sidney Charles Buxton.

Secretary for Ireland, James Bryce.

Lord president of the council, the earl of Crewe.

Lord of the privy seal, the marquis of Ripon.

President of the board of education, Augustine Birrell.

Chancellor of the duchy of Lancaster, Sir Henry Bartley Fowler.

The foregoing constitute the cabinet. The following ministers are not in the cabinet:

Lord lieutenant of Ireland, earl of Aberdeen.

Lord chancellor of Ireland, Right Hon. Samuel Walker.

First commissioner of works and public buildings, Lewis Vernon Harcourt.

#### SHORT ITEMS OF INTEREST.

The Agricultural Experiment station on the Chino ranch, has been finally closed as a station. It was established in 1890.

The Analy Standard has computed that 196 days passed this year when no rain fell. And yet all crops planted matured perfectly.

Prof. Ingham of the State University, is investigating pear blight in Tehama county. He ought to continue his investigations south of the Tehachapi.

The Ventura Republic says: So scarce is wood becoming in the county that consumers are buying it 15 and 20 miles and glad to get it at that.

The Tulare Register boasts that "Tulare county has shipped 437 cars, so far of this year's crop of oranges," and adds "that is pretty near as many as all North California will ship during the entire season."

If you expect your hens to lay regularly you must treat them kindly. Never scare them nor chase them. When handling them exercise care to be gentle. Do not hurry in caring for them either in feeding or dusting.

The cattlemen of Santa Cruz, San Benito, San Luis Obispo and Monterey counties have issued a call for a meeting for the purpose of organizing a state association, said meeting to be held in Salinas City on Thursday, December 21, 1905.

Linnaeus had a flower clock, a circular plot planted with flowers that opened at different hours of the day.

## IN FIELD OF HUSBANDRY

### OF INTEREST TO FARMERS AND ORCHARDISTS

Campbell System of Dry Farming—Facts About Alfalfa—Poultry Suggestions—Prosperity—Trees on Country Roads—Buy at Home.

#### Campbell System of Dry Farming.

Mr. Campbell's principles, as he explains them, are:

First—Catch the rainfall and store it where the roots of the plant can reach it.

Second—Keep the soil always fine and loose.

Third—Have a firm, solid foundation under the soil—a bottom to hold the water.

The careful regular application of these principles in farming will produce at least three times the results of ordinary farming, and often four and five times the results.

Store the rainfall in the soils, by keeping the surface of the ground always loose, which stops evaporation. It is impossible for moisture to rise to the surface through loose soil, and that leaves the ground in the best condition to receive the next rainfall. Thus you can make fourteen inches of rain go as far as twenty-five or thirty inches in raising all kinds of crops, plants or trees. We do not lose any of the rains—we have the full benefit of it. We keep it stored where the roots of the plants can reach it when they need it.

Stir the soil with a revolving disk and then go over it again and filling up the furrows. We call this "double-disking." It pulverizes the soil and levels it off. We keep going over it again and again. After every rain we stir up the soil, either with a disk or an "Acme" harrow. Finally we plow seven inches deep in the ordinary way and follow the plow with a subsurface packer—a machine which makes a compact, solid bottom, four inches from the surface, under the loose soil. Then we go over it again with the Acme harrow so as to keep the top soil loose and pulverized. After working the soil for a year in this way by what we call "summer tilling," we put in our wheat, either in the fall or in the spring, as is usual. The first year we do not put in any seed. We simply keep stirring up the soil so that it will remain loose and pulverized, and after one year of this sort of cultivation three crops can be grown in succession without reworking the tilling.

#### Facts About Alfalfa.

Alfalfa seed weighs sixty pounds to the bushel. For a hay crop, sow twenty to thirty pounds of seed per acre. For a crop of seed, sow fourteen to eighteen pounds per acre. Sow clean seed.

Sow alone, without any nurse crop. The latter is often just as harmful as the weeds.

Screen alfalfa seed before sowing to separate the dodder and other weed seed. Dodder is the worst enemy of alfalfa.

Sow alfalfa in the spring, as soon as the ground is warm—from the middle of May. Sow in drills or broadcast. Do not cover the seed too deep.

#### Poultry Suggestions.

Late hatches should have dry, warm houses in the cool weather. They are very susceptible to cold and need a dry, sheltered loafing place on cold, wet days, as well as a warm place to sleep at night. Many a siege of roup can be traced to a bunch of poor, neglected, late hatched chicks. When debilitated by exposure to cold and wet they take cold easily, and colds are very apt to develop into roup, the disease that has spoiled the shining prospects for many a poultry raiser. Hens will run with fall chicks until half grown. They seem to know their overgrown babies need plenty of warmth. The old hen method is the best if we want a few Christmas fies.

When other duties on the farm are crowding and something must be slighted it is apt to be the chickens. Whether we keep common mixed chickens or high priced pure breeds we ought to think enough of them to do the best we can by them in the way of comfortable houses for winter. Our houses are built as close to the ground as possible with good drainage. Cold air circulating under the floor is not good, and the higher a house is from the ground the colder it is.—Fannie M. Wood, in Successful Farming.

#### Prosperity.

The country is to be congratulated on its comparative freedom from swine diseases. The corn crop is abundant and swine are reasonably healthy. That it is so is matter for congratulation all around. This should mean good profits from this line of work, and it should encourage the farmers to redouble their efforts to maintain such freedom from disease, and also to improve upon it. If it is possible so far to reduce hog cholera, and swine plague, why should it not be possible to reduce it still further? Every swine grower should redouble his vigilance in the hope of hedging in those and kindred swine troubles to the narrowest possible limits.—Orange Judd Farmer.

#### Trees on Country Roads.

In planting trees on country roads these points should be kept in view: (1) To improve the general appearance of the property on which they are located; (2) to make each tree a specimen, with abundance of space for developing its flowers and foliage; (3) while the tree is developing, keep the lower limbs high enough above the road to allow loads of hay, etc., to pass; (4) let the trees take the course that nature intended—do not

"head in" or check growth in any place where it is not necessary; (5) establish flowers about the trees; a little California poppy seed raked in once a year just before the rains commence usually accomplishes this; (6) select native trees or those from similar climes, if possible—they are more sure to grow, stand changes of weather, and are not affected as would be a collection of exotic kinds; (7) study the needs of trees selected and give them what they want; most desirable shade trees grow on various kinds of soil, but the results are not always satisfactory; (8) along narrow roads, tall, slim-growing trees should be chosen, as they tend to make the road appear wider.—L. A. Times.

#### Buy at Home.

Many planters in adorning their gardens and home grounds are continually reaching out after the unseen, preferring to buy from lithographic plates in a foreign catalogue to trusting their own eyes and the guarantee of an honest home nurseryman. Plants bought from afar by mail or express are usually small for economy's sake, often weak and frequently untrue to name or sold under a nursery name different from the name of the same plant of your home florist's. The buyer usually pays more, unless of roses or other common and easily-rooted plants, than the price of the stock grown at home. There are as many tricks in the nurseryman's trade as in any other, and you should deal with the home grower where you can get back at him in some way if his stock is not as represented.

#### December in California Gardens.

Sow hardy vegetables, e. g., beets, cabbage, carrots, cauliflower, horseradish, onions, parsley, peas, rhubarb. Sow lettuce, radishes and spinach every month in the year.

Plant the following bulbs: Tulips, hyacinths, anemones, Ranunculus, Sparaxis, and the four lilies that must be planted early, viz., auratum, candidum, Harrisii and longiflorum.

Propagate carnations from cuttings. Continue planting all hardy plants and trees, also roses of all kinds.

Keep rose bushes well watered and fertilized, and experiment by disbudding for fewer but finer flowers. Rub out in the bud any inside growths rather than prune out next season.

Take up and store in dry, cool place dahlias and caladium roots and all bulbous plants that have finished blooming.—Garden Magazine.

#### Scratching From the Yards.

Luck has no acquaintance with the lazy man in the poultry business, either as a fancy or utility breeder.

Fatten and sell the cull cockerels, separate the off-color hens if you want them merely for eggs—Breed only the best.

It costs no more to feed and care for a standard-bred bird than it does for a scrub.

Are you grooming your exhibition specimens? If not, better be thinking about conditioning them for the shows which are to come off in the immediate future.

Lice and mites are the torment of fowls and the bane of their owners, hence never take it for granted that your premises are free, but be sure of it by frequent examination. To fight injurious insects is as essential to successful poultry culture as it is to feed and gather the eggs.

If you want the market your way, select your eggs as to size and color, and have them always clean.

Remember, the contented and happy hen is the one that yields good crops of hen fruit. See to it that your fowls possess pleasant surroundings and are gentle and approachable.

#### Avoid Changes.

Every poultry breeder knows, or ought to know, that sudden changes are undesirable for his stock. Yet very many, influenced by mistaken kindness, which more honors their hearts than their heads, will, upon the advent of cold nights, suddenly and without previous preparation, remove their feathered flocks from surroundings where they have enjoyed an abundance of pure air and ample room, to the confinement of tight houses where both space and air are limited. The result almost inevitably is that the fowls droop, sicken, become unprofitable and unsatisfactory, and not a few die. The sudden change upsets their digestion and impairs the oxidation of the blood. Diarrhea and lung troubles follow; cold, swelled heads, roup and the like are contracted; growth ceases or progresses slowly, and egg-production diminishes or stops; profit turns into loss, pleasure into disgust.—Country Gentleman.

#### Millions Received for Fruit.

County Clerk Phelps and assistants specially deputized have collated statistics relative to Riverside county and its production, with special reference to the output of the past year. The county has an area of 7,000 square miles, with 933,210 acres, assessed. More money was received for oranges than for any other product, \$5,377,495. The lemon crop aggregating \$1,055,145. Next in value to the orange crop is the grain output, which totals an even \$2,000,000. The dairy output was \$408,850 and the honey totaled \$92,335 in value. Of fruits other than citrus, the prune crop being second with a value of \$48,000. Pears were \$16,000, apples \$14,000, almonds \$10,550, grapes \$8,230, strawberries \$6,500 and vegetables \$45,000. Poultry sales were \$17,130. Manufactured products aggregate in value about \$500,000.

#### Husks Corn for Votes.

Topeka, Kas.—Henry J. Allen, an Ottawa editor, who is contesting for the Republican nomination for congress against Representative Scott, is being driven through the country by a champion corn husker. When Allen stops a farmer in the field to get his vote the driver takes the farmer's place husking corn. The friends of Congressman Scott say Allen is taking an unfair advantage of him.