

BORAX.

ALL ABOUT A VAST AND USEFUL INDUSTRY.

Mining Borax Crystals in the Far West is Difficult Work—Operations in a Refinery—Uses of Borax.

EVERY man who went to California in the early '50s hoped to have a gold mine of his own, where he could settle down and become as wealthy as a National bank with little or no exertion. But unfortunately nature had not provided enough gold mines to go around. Consequently it was not long before the country was flooded with a tatterdemalion swarm of men, half miners, half tenderfeet, who, instead of being their own millionaires, were seeking an opportunity for relieving the ache under their belts. They were also bent on discovering something—that is what they had come for—and if it couldn't be a gold mine, it might be a silver mine, a diamond-drift or anything—they cared very little what. And that is how the vast borax deposits of the region came to be unearthed.

Previous to that time borax came mostly from Asia, and it was an expensive and little known commodity, sold from some small glass bottle on the apothecary's shelf. But within ten years after the time the disappointed gold miners found the deposits borax had become almost as common as table salt. To-day the work of digging, transporting and refining it has grown to be a vast industry.

Borax crystals are no longer dug even in California and Nevada, because the substance has been found in much more convenient form for refining in combination with lime. In this State it occurs in mountain strata, and it has to be mined exactly like silver or copper, but the cost is far greater. In the first place, the region is totally destitute of water and fuel of any kind, both of which have to be transported long distances. Indeed, so dry is the country that workmen frequently go insane and both men and horses perish miserably from thirst if water is not kept constantly at hand. Besides all of these difficulties, accentuated by the necessity for having the finest machinery and skilled labor, all of the ore has to be transported for scores of miles over the desert before it reaches the railroads.

This work is mostly done with the aid of huge wagons with broad-tired wheels, weighing about 8000 pounds each and having a carrying capacity of 20,000 pounds. To each wagon several teams of mules and horses are hitched, and the long trip across the desert and through perilous mountain passes begins. One of the wagons in the train is provided with a tank of water, for it would be impossible to travel without it. The drivers are rugged, fearless men, partaking of the characteristics of the country.

On reaching the railroad the ore from the great wagons is loaded on box cars and transported several hundred miles to the refineries, one of the largest of which is located on San Francisco Bay. Here the rough, broken masses of brown rock are unloaded at the door of a long, shed-like building, and the process which is to transform it into the beautiful crystals of borax is soon under way. The crude material first passes between the jaws of a rock breaker, from which it comes out in small, pebble-like pieces. Then it goes into the hopper of a machine not unlike an old fashioned burr stone flour mill, where it is thoroughly pulverized. It now has about the appearance of buck-wheat flour, and is ready for the final process of separating the borax.

To accomplish this it is thrown into a great steam chest, or pressure boiler, called a digester, and carbonate of soda in a fixed proportion is added. When heat is applied in the furnace below and the mass within the boiler is churned with plungers the digestion in the big stomach begins.

The carbonic acid in the carbonate

of soda suddenly deserts the soda and unites with many spirits and fizzings with the lime in the borax ore, which is nothing more than borate of lime. Then the boric acid in the ore finds more attractive company with the deserted soda, and in the united state becomes biborate of sodium, which is only the aristocratic name for borax. It is still in solution, however, and as soon as it cools off it is run into great vats filled with myriad steel rods. To these rods the borax crystallizes just as rock candy clings to a string. When the borax is all out of solution the rods are withdrawn from the water and the crystals of borax scraped off. By dissolving them again and recrystallizing a purer form of borax is secured. When powdered it is ready for the market.

Borax is used in hundreds of different ways, and, as the people become more familiar with it, the demand grows greater. The meat packers consume large quantities in the dry packing of meat for export, and iron and glass workers and enameling factories use it constantly as a flux.

But the greatest proportion of the whole amount produced is consumed in the household. Not being a patented commodity it sells at its real market value, which is about seven a pound. Its alkaline properties make it valuable for softening hard water and for cleaning woodwork. Almost every housewife is familiar with it. It is also used in various ways as a medicine and in the toilet. It is also said to be death on insects of all kinds.—Chicago Record.

In Cloud-Land.

In order to better understand the role played by cirrus clouds as rain indicators, we must first discuss the causes of these occurrences. A study of the weather indications and barometrical readings, as they appear in our daily papers from the report of our "Weather Bureau," shows that areas of high or low air-pressure are constantly passing over the earth's surface in irregular succession. The areas of high atmospheric pressure—or barometric maxima, meteorologically expressed—stay longer in one locality than the areas of low pressure—the depressions, or barometrical minima. These last are more or less defined currents of air, which circle in the form of wind around the region of the lowest atmospheric pressure, moving always from North to West or from South to East—the reverse of the hands of a clock. It must not be imagined, however, that the air simply moves around this area of depression, but rather that it is constantly being drawn into its centre and is carried upwards in great whirls or spirals. As the air rises, it expands and becomes colder; the vapors it contains condense into clouds, and finally are transformed into rain. The centre of the barometrical depression is therefore marked by cloudy, rainy weather. The wind which encircles the depression becomes more active as the difference of the atmospheric pressure becomes more marked, or—in other words—as the barometer falls.

In brief, therefore, barometrical depressions are caused by huge ascending spirals, or whirls of air, which are carried upwards to extreme heights, and from there are wafted in any direction. In these heights the humidity of the atmosphere is frozen, and is wafted away in cloud forms which are composed of ice-crystals. These are none other than cirrus clouds, and they may float several hundred miles from the seat of the depression. It will now be seen why cirrus clouds may be justly regarded as forerunners of rain, even when they make their appearance in clear weather. They tell with absolute certainty of an approaching atmospheric depression, and this is substantiated by a gradual falling of the barometer soon after they make their appearance.—Home and Country.

The Damascus apricot crop is worth \$150,000 a year after all expenses have been deducted. In addition to other uses, a valuable oil is made from the kernel of the fruit.

TEMPERANCE.

THE ONLY WAY.

An effort is being made to get rid of drinking while sparing the drink. The effort has always been and always will be a dismal failure. Drunkenness has its origin in the drink. All experiences show that you cannot have the drink without the drunkenness. It is drink, drunk, drunk. The only way to prevent drunkenness is to stop drinking.—Temperance Advocate.

"BRING IN THE CHOICEST LIQUOR."

Some time ago eight or ten lumbermen went into a hotel in one of our Western cities, and engaged a private parlor. They were jolly, well-to-do fellows, and met to settle up a year's business over a social glass, having had a successful speculation together. Summoning the gentlemanly clerk of the house, they ordered him to bring in the choicest liquor to be obtained—"nothing but the purest and finest article."

The table was spread, glasses brought out, and mirth and jollity prevailed. Presently in came the clerk with a silver pitcher of ice water, and, as he filled each goblet, with quiet dignity, he remarked, "Gentlemen, I have done the best I could to obey your order, and here is the purest article to be found in the United States."

All looked in dumb amazement, so unexpected and so ludicrous was their position. But they were equal to the occasion. Not a word was said till each had his glass before him, filled with the sparkling fluid. Almost simultaneously they all raised their glasses, and pledging each other's health, made the additional pledge not to drink anything stronger for the year to come. Nearly twelve months have passed, and they have been loyal to their vow. May we not hope that the pledge may be renewed for life.—Zion's Watchman.

ALCOHOL AND RHEUMATISM.

One item in Dr. Richardson's report of his practice in the London Temperance Hospital refers to his treatment of rheumatism without alcohol. He says:

"Out of seventy-one cases of acute or sub-acute rheumatism, the large majority acute, and attended with temperatures moving up to 104 degrees Fahr., sixty-nine recovered, and two, although they were discharged without being put on the recovery list, were so far relieved that a few days' change in country air seemed all that was required to induce full restoration. Comparing the experience of the treatment of acute rheumatic disease without alcohol with that which I have previously observed with alcohol, I can have no hesitation in declaring that it is of the greatest advantage to follow total abstinence absolutely in this disease. The pain and swelling of joints is more quickly relieved under abstinence, the fever falls more rapidly, there is less frequent relapse, and there is quicker recovery. In brief, the experience of treatment of rheumatic fever minus alcohol presents to me as much novelty as it does pleasure, and I am convinced that if any candid member of the profession could have witnessed what I have witnessed in this matter, he would agree with me that alcohol in rheumatic fever, however acute, is altogether out of place. I am also under the conviction, though I express it with great reserve, that in acute rheumatism, treated without alcohol, the cardiac complications, endocardial and pericardial, are much less frequently developed than where alcohol is supplied."

SOLUTION, DILUTION AND POLLUTION.

There was a man who praised porter, and said it made him fat. But he was answered that it made him lean sometimes—yes, against lamp-posts. This man insisted that porter was both meat and drink. One wet night, when going home, he fell into the ditch, and his "meat and drink" that night was also "washing and lodging" too. A writer had called whisky the devil in solution. He should add that beer was the devil in dilution, and porter the devil in pollution.—James Guthrie.

SOWING THE WIND.

"They that sow the wind shall reap the whirlwind" is being exemplified anew in wine-drinking France, where one of the problems most seriously discussed is the connection between crime and youth, back of whom lie generations of moderate wine-drinkers. The most daring, the most sanguinary and the most hardened criminals with whom France has of late years had to deal, have been with few exceptions mere youths, the great majority being under twenty years. M. Guillot, an investigating magistrate, says: "During my long career as judge d'instruction I have seen the lowest depth of human corruption, but it is only since I have had to do especially with young criminals that I have become acquainted with it."

TEMPERANCE NEWS AND NOTES.

In St. Petersburg the names of habitual drunkards are displayed on posters in the leading thoroughfares.

Barrooms are closed on Sunday in all of Scotland, in all of Wales, and in all of Ireland, except five towns.

The cost of liquor consumed throughout the United Kingdom last year was \$632,140, or \$17.17 per head of population.

The receipts of the German Government from tax on brandy and spirits during the fiscal year 1892-3 amounted to \$35,000,000.

A bill has passed the Alabama House prohibiting the sale of liquor anywhere throughout the State outside of incorporated towns.

Germany heads the list of beer drinking countries in 1893 with 1,202,132,074 gallons, an increase of 34,000,000 over 1892, the consumption being thirty-three gallons per head.

The total destruction by fire in the United States during the last twenty years amounts to \$2,062,338,774—less than the direct and indirect expense of the liquor traffic for the single year 1894.

The Temperance Chronicle of London says: "It must not be forgotten that the state of Sweden to-day, both as regards the consumption of alcohol and the convictions for drunkenness, is worse than the state of Great Britain or Ireland."

A Parliamentary return gives the total number of convictions for drunkenness in England and Wales in 1893 at 153,072. Of these 10,347 were in Wales. The total number of publicans convicted for permitting drunkenness during the same year was 918.

According to medical records, the British Medical Association has investigated 4231 deaths, taken at random, with reference to the question of alcohol and longevity. They found the average age of temperate drinkers to be sixty-three years; careless drinkers, fifty-nine years; free drinkers, fifty-seven years; intemperate drinkers, fifty-three years; total abstainers, fifty-one years.

Destitution in Nebraska.

Official statistics show that at least 100,000 persons in Nebraska will have to be supported by charity until another crop is raised.

RICH RED BLOOD

In the body of an adult person there are about 18 pounds of blood.

The blood has as its most important elements, small round corpuscles, red and white, in proportion of about 300 red to 10 white ones.

If the number of red corpuscles becomes diminished and the white ones increased the blood is impure, thin, lacking in the nutrition necessary to sustain the health and nerve strength of the body.

Then That Tired Feeling, Nervousness, Scrofula, Salt Rheum, or others of the long train of ills, according to the temperament and disposition, attack the victim.

The only permanent remedy is found in a reliable blood medicine like Hood's Sarsaparilla, which acts upon the red corpuscles, enriching them and increasing their number. It thus restores the vital fluid to healthy condition, expels all impurity, cures Nervousness, That Tired Feeling, Scrofula and all other diseases arising from or promoted by low state of the blood.

That these statements are true we prove not by our own statements, but by what thousands of perfectly reliable people say about Hood's Sarsaparilla. Read the testimonial in the next column from a beloved clergyman. Then take

"In view of the benefit I have had from Hood's Sarsaparilla I wish to give the following testimonial. I have several times been badly

Poisoned With Creeping Ivy.

As the old school of medicine simply tried to remove the symptoms instead of the sources of them, much of the poison was left in my system to appear in an itching humor on my body with every violent exertion in warm weather. At all times there were more or less indications of poison in my blood, up to a year ago last winter, when

Large Sores Broke Out

on my body. I then purchased a bottle of Hood's Sarsaparilla, and after using that and a half of another bottle the sores and humor disappeared. I attended the Christian Endeavor Convention in Montreal and also visited the World's Fair in the hottest weather of the summer. Was on the go all the time, but

Had No Recurrence

of the burning and itching sensation which had marred every previous summer's outing. I have reason, therefore, to be enthusiastic in my praise of Hood's Sarsaparilla." SAMUEL S. SCHWELL, pastor of Free Baptist Church, Apalachin, N. Y.

Hood's Sarsaparilla

The Blood Purifier and True Nerve Tonic.