CHEMISTRY

California Wells May Give 1,000 Tons of Dry Ice a Day

Natural Pressure of 230 Pounds Per Square Inch Reduces Artificial Pressure Necessary to Solidify CO_2

NATURE has provided raw material for a gigantic refrigeration plant by the side of one of the greatest outdoor hothouses for winter fruits and vegetables in the world—the Imperial and Coachella valleys of southern California. Huge reserves of natural carbon dioxide gas, from which is made "dry ice," have been located under the torrid Salton Sea Basin of southern California, it was reported to the American Chemical Society. The gas is tapped from wells drilled starting at 200 feet below sea level.

One thousand tons of "dry ice" can be produced each day at one location on Mullet Island alone, according to Thomas B. Slate, pioneer construction engineer in that field. The natural pressure of 230 pounds to the square inch reduces the artificial pressure necessary to turn the pure carbon dioxide into its solid "dry ice" form, and consequently the cost is much less, estimated by Mr. Slate at $10 per ton.

Almost limitless possibilities in the field of household refrigeration, air conditioning, railway refrigeration and dairy technique are seen. Located as they are on the transcontinental line of the Southern Pacific, the gas fields open new possibilities for the cheap refrigeration of the vast tonnages of fruits and vegetables shipped eastward across the continent every year. Not only does "dry ice" provide an ideal cooling agent, according to Prof. G. Ross Robertson, of the University of California at Los Angeles, but the pure gas itself, introduced into a closed and sealed freight car, creates an insulating "blanket" which does not readily conduct the outdoor heat.

Scientists are at a loss to explain the extreme purity of the Salton gas, shown by tests to range from 99.1 to 99.6 per cent. pure carbon dioxide. There is no unpleasant intermixture of hydrogen sulfide, better known as "rotten egg" gas because of its similarity in odor to aging eggs. Like most natural carbon dioxide, it is probably made by the action of oxidized sulfur on natural mineral carbonates such as limestone. In this case purification is effected far below the surface by some unknown process.

Although discovered some three years ago, no reduction of gas pressure has been noted, indicating that almost limitless amounts of the gas are stored. Dr. Dwight Roberts, California geologist, estimates that about thirty-five billion cubic feet of the gas are already stored, capable of yielding nearly a million tons of "dry ice."

"Experience in Mexico has shown that carbon dioxide wells may run at full blast for years without diminution, all of which suggests renewed supplies by chemical action deep below the surface," said Professor Robertson.

Boulder Dam has removed forever the threat of inundation of the area by a flood of the Colorado River, it is thought.

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BOTANY

NATURE RAMBLINGS by Frank Thone

Unjustly Condemned

HOW OFTEN bright and brave things have to suffer for the crimes of others, who do their sinning sneakily!

Goldenrod, without question, is going to be cursed again this summer by millions of hay-fever sufferers, on the flimsiest kind of circumstantial evidence. They begin their agonies of sneezing and inflamed eyes just about when goldenrod comes into bloom. The two events are associated in time; therefore they are assumed to be causally connected.

Nothing could be farther from truth or justice. The pollen that actually causes most hay-fever cases during goldenrod time comes from the ragweeds, which also come into full flower in late summer. But their flowers are relatively inconspicuous green things, which most people would hardly recognize as flowers at all, since they lack the conspicuous petals and bright color that we commonly associate with flowers. So the honest bright goldenrod gets the blame.

As a matter of fact, goldenrod pollen hardly gets into the air at all. It is a heavy, sticky type, like most pollens produced by bright flowers that depend on insects to carry the fertilizing dust. It can be shaken into the air if you thrash an armful of goldenrod around enough, but it is hardly probable that it drifts very far. It is not impossible that there are a few persons who are susceptible to goldenrod pollen, but to get a sneeze out of a bunch of goldenrod you would just about have to burrow into it with your nose.

Ragweed pollen is quite something else. It is a dry, fluffy stuff, particularly well fitted for drifting down the wind, as the flowers that produce it are particularly adapted for discharging huge quantities of it into the air. Recent studies at the University of Minnesota have