Enough Helium Now For Many Uses

Chemistry

Abrasive Glass Blackboards Also Described Before Chemists

HELIUM, first discovered in the sun and later obtained at great expense in minute laboratory quantities, is now familiar to everyone as the lifting gas for American airships. Soon, however, it may be even more common for still other uses are rapidly being found for it. At the meeting of the American Chemical Society in Cincinnati this week, R. R. Bottoms and W. E. Snyder, of the Helium Co., Louisville, Ky., stated that "helium gas is now available in commercial quantities in the United States and there is sufficient supply to meet not only the needs of aeronautics, but for other uses as well."

The points that make helium valuable, they stated, are that it is inert chemically, not combining with any other element; it is very light; it is insoluble, conducts heat well and can be cooled to an extremely low temperature without liquefying. These properties, they say, make it valuable for use in metallurgy, for the preservation of food, for heating and cooling and as a circulating medium, instead of air, in drying systems. They also suggest that it can be used as an artificial atmosphere for deep sea divers and caisson workers and for the treatment of diseases of the lungs and blood. In such uses it would be employed as a substitute for ordinary air, the helium being mixed with oxygen, and thus taking the place of the nitrogen in the atmosphere.

Abrasive Glass for Blackboards

When Little Johnny and Mary go to school within a few years, he or they may write their lessons on blackboards of glass instead of the slate their parents used. Foster Dee Snell, consulting chemist of Brooklyn, N. Y., and Miss Beatrice S. Fox, who is associated with him, told the Society of a method of making glass blackboards that overcomes previous objections to this material.

In making the glass, about 25 per cent. of black chromite, a mineral consisting of oxides of iron and chromium, is added to the raw materials. This makes a glass that is sufficiently abrasive to rub off enough of the chalk to permit writing on it. Ordinary ground glass does not do, because it wears smooth in time. They declared that artificial rubbing tests of the new glass, equivalent to 125 years of use, produced no appreciable damage to the writing surface. Even slate, they say, requires occasional refinishing.

"The new product," they conclude, "is not a 'substitute' in the usual sense of the term, but a material to replace slate which is equal in quality in every way and superior in many."

More Dry Ice Than Gas

More solid carbon dioxide, commonly known as "dry ice" is now used than the liquid form of gas, in which it was formerly marketed. D. H. Killefer, chemist of the Dry Ice Equipment Corp., New York City, told members of the American Chemical Society at a meeting in Cincinnati that nearly thirty thousand tons of this former laboratory curiosity will be used during 1930. This is greater than the total amount of liquid carbon dioxide used in 1927, the latest year for which figures are available. It is used for refrigeration, because of its advantages over ice in being colder and in not melting, but changing directly from the solid form into the gas.

Testing Cleaning Fluids

Dry cleaning fluid, to work properly, should be clear enough to read ordinary newsprint through 11½ inches of it; should have a sweet odor; should be light in color and free from moisture, fatty acids and alkali. These are some of a series of 11 tests for the use of dry cleaners to determine when their cleaning fluid is exhausted. At the meeting of the American Chemical Society in Cincinnati Ralph A. Morgen and Frank Fair described these tests. In order to give satisfactory results, they stated, it is not necessary that the fluid be maintained at the same specifications as the original, but it should be maintained at a sufficiently high quality to give good cleaning.

Home-Made Talkies

Home-made talking movies, made at a cost of $12 as compared with a figure many times as much for the professional article, are being employed at the Medical College of Virginia, Richmond, Dr. Sidney S. Negus, professor of chemistry there, said. A 16 mm. home motion picture camera is used, he said, to photograph the instructor writing chemical formulae on the blackboard.

Then the pictures are subsequently run, and as they are run he talks into a microphone connected with a simple recording apparatus that makes a record on an aluminum disc. When the movies are shown to the students, and at the same time the record is played on a phonograph, an effect of partial synchronization is obtained.

Fertilizing Florida

With an average of 798 pounds of fertilizer used on every acre of crop land during 1929, Florida leads the United States in the use of fertilizer, R. O. E. Davis, research chemist of the U. S. Bureau of Chemistry and Soils, told members of the Society.

Next to Florida is New Jersey with 417 pounds per acre. On the whole, the states of the Atlantic seaboard use it much more extensively than those inland, though a great increase in its use has come since 1913 in the Pacific Coast states, and there is also a tendency to increased use in the West North Central states. Cotton uses on an average 108 pounds per acre, though 31 per cent. of all the fertilizer used is on this crop. On citrus fruits the rate is 1163 pounds.

Five principal crops consume about 82 per cent. of the fertilizer, though less than 25 per cent. of the acreage devoted to them is fertilized.

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Parks for Spain

SPAIN has become a recruit to the ranks of nations developing national park systems, an idea which was initiated in the New World with the founding of Yellowstone National Park in 1872. Spain now has two national parks and three areas designated as "reserves of national interest."

One of the parks is in northern Spain, and the other in the northeast, deep in the Pyrenees. Both are in exceedingly rugged territory, where there are still many wild animals—chamoix, bear, wild boar, deer, etc.

Parks

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