

on the other side of a suitable vertical dividing sheet of material. Thus one component of the mixture falls on the one side and the unattracted particles on the other.

Mineral granules the size obtained in commercial grinding machines were used in the tests. One difficult separation achieved was the removal of bituminous coal dust from anthracite dust. Among the difficult separations made possible were those of separating (1) galena from pyrite, (2) muscovite from lepidolite (both micas) and (3) calcite from dolomite.

Science News Letter, May 7, 1938

CHEMISTRY

Two New Vitamins L₁ and L₂ From Liver, Yeast

TWO new vitamins have just been added to this rapidly growing family of food essentials. The names L₁ and L₂ have been selected for these latest vitamins by their discoverers, Drs. Waro Nakahara, Fumito Inukai and Saburo Ugami of the Institute of Physical and Chemical Research, Tokyo. Reporting their discovery (*Science*, April 22), the Japanese scientists state that both L vitamins are needed by rats to produce milk for their young. Baker's yeast is the source of L₂ but not of L₁, which comes from beef liver.

Science News Letter, May 7, 1938

CHEMISTRY

Sixth Part of Vitamin B Obtained in Crystal Form

ISOLATION of chemically pure crystals of vitamin B₆ has been reported by Dr. Paul Gyorgy of Western Reserve University School of Medicine (*Jr. American Chemical Society*, April). This part of the vitamin B complex cures a skin disease in young rats which occurs when the animals eat a diet lacking in vitamin B₆.

Science News Letter, May 7, 1938

● RADIO

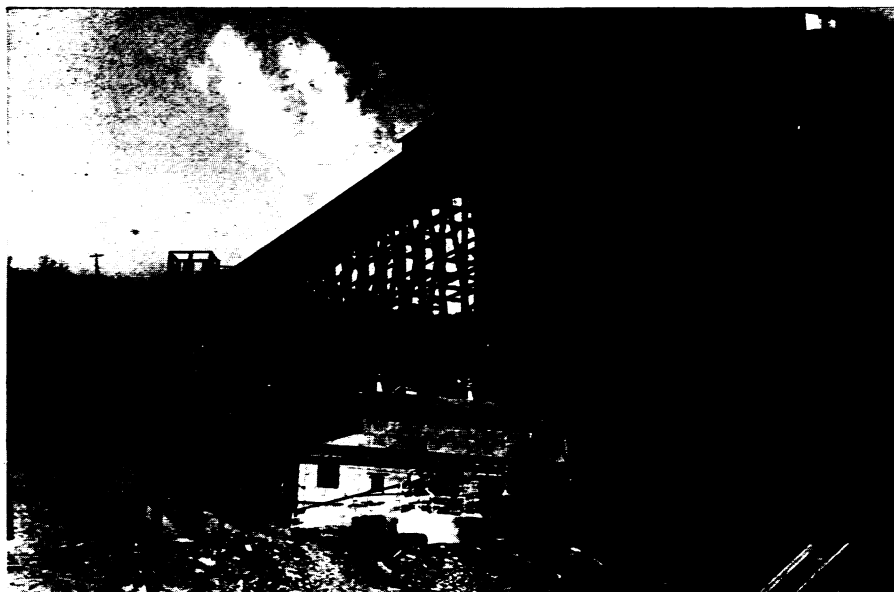
May 12, 3:00 p. m., E.S.T.

RARE METALS FIND USES—Paul M. Tyler of the U. S. Bureau of Mines.

May 19, 3:30 p. m., E.S.T.

LOST ARTS OF THE STONE AGE—Dr. H. C. Shetrone, Director of the Ohio State Museum.

In the Science Service series of radio discussions led by Watson Davis, Director, over the Columbia Broadcasting System.



OLD WAS DIRTY; NEW IS CLEAN

The silver-painted building nestled close to the large old frame coal breaker is the new coal refining building. Inside and out it gives the appearance of an oil refinery. Clean enough to allow workmen to wear white clothes, it will certainly better working conditions in the coal fields.

MINING

High-Grade Fuel Made From Run-of-the-Mine Coal

SUCCESSFUL development of a process for the cheap production of standardized high-grade fuel from virtually any grade of material ranging from run-of-the-mine coal down to refuse has been announced.

A pilot plant for production of high-grade coal from low-grade materials is in operation at Shenandoah, Pa. Discoverers of the process, developed in research work begun in 1902, and operators of the pilot plant are the E. I. du Pont de Nemours and Company.

Made possible by the use of recently available heavy liquid compounds, the process depends on the fact that materials with different weights for the same volume can be separated by placing them in a heavy liquid the specific gravity of which is between the materials to be separated. The heavier material sinks to the bottom, the lighter one floats on top.

Halogenated hydrocarbons, such as pentachlorethane and tetrabromomethane, the latter three times as heavy as water, are the chemicals whose specific gravities

are between those of coal and slate. Slate is the refuse from which second-grade and even poorer coal must be separated in order to produce a commercially usable product.

The coal-and-slate mixture which is run through this liquid which separates coal from slate, the latter sinking to the bottom, is pretreated with an active agent solution which places a water film around the particles of coal and slate. This latter step constitutes the achievement which has rendered the process commercially feasible.

The heavy liquids used in the process do not change in specific gravity while in use so that the quality of the coal produced in any breaker or cleaning plant is not dependent on the human element. The heavy liquids can be recovered and used again, making the process cheap to operate.

Production of an improved and standardized coal through use of the new method is anticipated by the engineers who developed the process.

The sink-and-float process, as it has