

CHEMISTRY

New Protein Solvent

► **NEW LIGHT** on protein, fundamental building material of animal bodies, comes from discovery that liquid sulfur dioxide will dissolve protein if certain kinds of salts are added to the liquid.

Dr. Joseph J. Katz of the Argonne National Laboratory, Lemont, Ill., made the discovery that addition of an iodide or a thiocyanate salt of an alkali metal changes the sulfur dioxide liquid into a solvent for protein. Previous researchers had found the material inert.

Guided by the well-known fact that a little ordinary salt helps many chemicals dissolve in water, Dr. Katz tried the effect of salts which dissolve in the sulfur-containing liquid. His technique succeeded in making this substance dissolve protein, one of the less soluble organic materials. This advance in methods of studying the fundamental life material is reported in *Science* (April 29).

Sulfur dioxide, the pungent gas noticed when striking a match, becomes a liquid at 14 degrees above zero Fahrenheit. In making protein solutions by Dr. Katz' method it is necessary to work at temperatures lower than this. Addition of more of the liquid without more of the salt precipitates the protein again. Whether this precipitated protein differs appreciably from the material originally dissolved has not yet been determined. New understanding of the building material of living tissues may come from work on this new form of protein.

One of the advantages claimed by Dr. Katz for the new solvent method is that it will avoid confusion due to overlapping of effects caused by other solvents with those due to the dissolved protein. He points out that "there are certain advantages to the study of the infrared spectrum of proteins in solution rather than as films or fibers. This has been, at best, a difficult task, since the usual protein solvents obscure at least a major portion of the infrared spectrum of the protein. With liquid sulfur dioxide as a solvent, the situation is greatly improved."

"Because potassium iodide is transparent in the infrared, the infrared spectrum of proteins dissolved in sulfur dioxide-potassium iodide solution can be readily studied.

Science News Letter, May 14, 1955

MEDICINE

Radioactive Phosphorus Used in Breast Cancer

► **RADIOACTIVE PHOSPHORUS**, combined with X-rays and surgery, make a good team for treatment of breast cancer, Drs. Bertram V. A. Low-Beer and H. Glenn Bell of the University of California told the Fifth Inter-American Congress of Radiology meeting in Washington.

More time will be needed for a clear analysis of results from this combined treatment, they said, but their hope is that more patients will survive not only five years but ten years without recurrence of the disease.

"Five-year disease-free survival has not been improved significantly in the past 20 years," Dr. Low-Beer said. Any improvement in survival figures is due to stricter selection of patients for surgery rather than an actual increase in number of patients saved.

Treatment for breast cancer, he said, must be directed not only to local area of involvement, but to any cancer tissue remote from the immediate region.

Science News Letter, May 14, 1955

TECHNOLOGY

Get Sugar Juice by Dashing Beet Chips

► **A NEW** method to get the juice from sugar beets, smashing chips to a pulp against a baffle, was described at the meeting of the American Institute of Chemical Engineers in Houston, Tex.

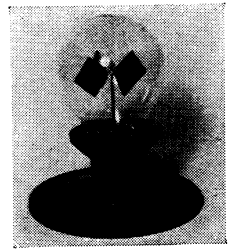
Equipment for the process is simple in design and small for its maximum capacity, 23 pounds per minute, L. E. Brownell, S. A. Zieminski and T. H. Lee of the University of Michigan reported.

Shooting the chips along with liquid into the barrier ruptures the cells, freeing the sugary juice.

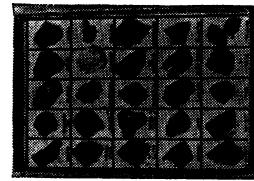
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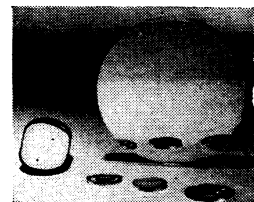


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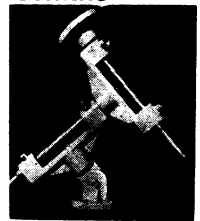
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