

CHEMISTRY

Chemistry on the Home Front

New mold treatment for obtaining more alcohol, sulfa drug which may aid one type of shock, production of fuels from plants among subjects at meeting.

➤ AMERICAN CHEMISTS discussed all phases of chemistry at the 107th national meeting of the American Chemical Society in Cleveland. Here, on pages 243-247 and 252-253 of this SCIENCE NEWS LETTER, are stories on some of the papers presented as reported by Dr. Frank Thone, Science Service's representative at the meeting:

More Alcohol for War

➤ MORE ALCOHOL for smokeless powder, synthetic rubber and the thousand other uses of war can be produced from a given quantity of grain through a new mold treatment than with the traditional malting method, M. Roberts, S. Laufer, E. D. Stewart and L. T. Saletan of the Schwarz Laboratories, New York City, disclosed in a paper presented before the meeting of the American Chemical Society in Cleveland.

Before grain can be turned into alcohol, its starch must be converted into sugar. This has long been done by treating it with malt, which contains a digestive ferment or enzyme. It has been discovered, however, that a species of mold, a botanical cousin of the one that produces penicillin, turns out a superior kind of enzyme which turns the starch into sugar more rapidly and completely than the time-honored malt. This mold is cultivated on masses of bran, dried and ground up before being added to the grain mash.

The four chemists making the report stated that the increase in alcohol yield under the mold-bran method amounts to as much as 10% to 15%.

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Acid Improves Milk "Wool"

SYNTHETIC wool-like fibers made from milk can be improved by treatment with acid, A. E. Brown, W. G. Gordon, Edith C. Gall and R. W. Jackson of the Eastern Regional Research Laboratory, U. S. Department of Agriculture, reported before the meeting. Acetylation did not increase the strength of the fibers, the chemists stated, but the treatment

did make the material more resistant to boiling, and rendered it more nearly similar to wool in its behavior in the dye vat.

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Coal Tar Treasures

➤ COAL TAR, that familiar magician's hat of chemical industry, is still turning out new and valuable things, the meeting of the American Chemical Society heard from F. E. Cislack, director of research for the Reilly Tar and Chemical Corporation of Indianapolis.

Under the stimulus of war needs, a relatively neglected group of tar compounds, that have hitherto been only laboratory curiosities, have become the mass-production sources of a wide range

of substances, from synthetic rubber to a vitamin used in enriching bread. The synthetic rubber, reported the speaker, is the nearest approach to the natural article that has yet been made; it is known as vinylpyridine. The vitamin is synthetic nicotinic acid; the new process makes it much more cheaply than the former method of extracting nicotine and subjecting it to chemical treatment.

A vital contribution to the wartime production of steel is made by these coal tar bases, Mr. Cislack said, in their use in the acid baths that dissolve the scale on steel formed during the rolling process. The acid ordinarily attacks steel as well as scale; addition of coal tar bases to the acid inhibits their action on the steel while leaving their effectiveness as scale removers unimpaired.

Other useful jobs for coal tar bases enumerated by the speaker included waterproofing material for cloth, fungicides and germicides. Notable among



SPRAY-GUNNING RUBBER—Bronze propellers fitted to steel shafts on wooden vessels, such as U. S. Navy sub-chasers and minesweepers, produce an electrolytic action through the union of two dissimilar metals in salt water, with the result that the shaft is so eaten away within a few months that it cannot stand up under high-speed operation. The first successful solution to this menace was found to be Thiokol synthetic rubber flame-sprayed onto the shafts, as shown in this picture from the Schori Process Corp. of Long Island City, N. Y.