

## CHEMISTRY

# Vitamin A Synthesized

Kept secret during the war to avoid aiding the enemy, the process seems to promise independence of fish liver oils as source.

➤ VITAMIN A, hitherto obtained from fish liver oils, has now been made synthetically, Prof. Nicholas A. Milas, of the Massachusetts Institute of Technology, announced at a meeting of the American Chemical Society in Cambridge, Mass.

The synthesis was accomplished during the early part of the war but was kept a secret. War interference with the fishing industry caused a shortage of this vitamin, particularly important for growing children and necessary for eye health at all ages. To prevent wastage of the precious supply, the amount of the vitamin in multiple vitamin pills was restricted.

Now it appears that we were becoming independent of fish as a source of supply and need not worry over any future shortage of the natural vitamin.

Germany was also believed suffering from a shortage of this vitamin, in spite of the fact that she had access to some Norwegian fish liver oils. The acute shortage of vitamin A containing fats suffered by Germany and her allies during the first World War has been held responsible for the breakdown in morale that contributed to their defeat in 1918. These considerations led to keeping in-

formation about the synthesis of the vitamin secret for the duration.

Before the war, in 1937, one of Germany's leading organic chemists, Richard Kuhn, had announced a synthesis of vitamin A. Attempts by other scientists in Germany and other countries to synthesize the vitamin by his process, however, were entirely unsuccessful.

The M.I.T. workers investigated several processes before they succeeded in making the vitamin in the laboratory. The most successful process involves seven to eight chemical steps in which beta-ionone, ethyl chloroacetate, acetylene, and derivatives of beta-hydroxybutanone-2 are the principal raw materials used. Starting from beta-ionone the vitamin A active product is produced in an overall yield of 10-15%.

The biological potency of the product is only one-tenth to one-thirtieth that of pure vitamin A crystals obtained from natural sources, but is 50 to 100 times greater than that of ordinary cod liver oil.

The synthetic process has not yet been translated from the laboratory to commercial production but some preliminary cooperative work was done along these lines during the war.

*Science News Letter, January 19, 1946*



**FUNGI TEST**—Radar and radio equipment, switchboards, transformers and hundreds of other kinds of apparatus which went into the Pacific war theater in huge quantities were tested against attacks from every type of mold common to Pacific areas. Sixteen different kinds of fungi here receive their weekly meal of homemade bread to keep them robust and destructive. Photograph from Westinghouse.

The alkali is injected into the veins in the form of sodium lactate and given by mouth in the form of sodium bicarbonate. If the patient is unconscious, the sodium bicarbonate is given by stomach tube. The treatment must be given promptly and repeated, at about hourly intervals, three or four times until tests show the acidosis has been overcome.

Within a few hours the breathlessness, nausea, cramps and mental symptoms abated. Blurring of vision cleared within 24 hours in many cases. When discharged from the hospital, after about two weeks, all but four of the 26 had as good central vision as before the poisoning. Another two regained apparently normal vision within the next three months.

*Science News Letter, January 19, 1946*

## MEDICINE

# Alkalis for Poisoning

Victims of wood alcohol poisoning saved from blindness and death by new treatment. Must be given promptly and repeated at hourly intervals.

➤ VICTIMS of poisoning by methyl alcohol, popularly known as wood alcohol and smoke, can be saved from blindness and death by alkali treatment, four Naval medical officers report. (*Journal, American Medical Association*, Jan. 12)

Good results with this treatment in 26 out of 31 cases were achieved by Comdr. W. B. Chew, Comdr. E. H. Berger, Capt. O. A. Brines and Capt. M. J. Capron. The other five died within three hours after being admitted to the hospital in a critically ill state.

One of those saved was unconscious for about 12 hours.

The men had drunk wood alcohol in amounts estimated at from about three ounces to about one pint. Many also had drunk beer ranging in amounts to 21 cans.

Washing out the stomach, giving fluids and purgatives has been the usual treatment. The profound acidosis present has prompted the use by some physicians of alkali treatment which the Navy doctors also found gave good results.

## CHEMISTRY

# TDE Deadlier Than DDT For Mosquito Larvae

➤ TDE, a chemical compound related to DDT and sometimes found as an impurity in the commercial product,