

## AGRICULTURE

# Synthetic Insecticides

To supplement war-scarce insect poisons formerly obtained from Japan or Jap-controlled countries, new insecticides have been developed.

► WHEN the Japanese war cut off imports of vegetable insect-control poisons from the Far East, America was not caught wholly unprepared. Government, state, university and industrial laboratories had been searching for synthetic and other substitutes for two decades, and had achieved at least partial success.

Prior to 1940 some dozen synthetic organic insecticides were made and tried. The cheap insecticide materials imported from Japan and other places delayed any of them from becoming widely used. The war situation now has changed the picture; substitutes must be used if the farms and Victory Gardens are to produce enough food to supply our needs.

Among the synthetic organic insecticides are those made from the organic thiocyanates, which are organic salts of cyanic acid. The insecticidal value of the vapors of these volatile thiocyanates was first discovered in the U. S. Department of Agriculture about 20 years ago. Later one of the commercial chemical companies devoted serious intensive study to the thiocyanates and developed a number of effective insect-control materials known commercially as Lethanes. During the past five or six years they have been tested thoroughly by state agricultural colleges.

These Lethane products are now reported to be the major ingredients in the household, livestock and industrial sprays used in this country. The Lethanes are used in agriculture in a mixture with a small amount of rotenone, the principal ingredient of the insecticide dusts used in the past. The supply of rotenone is not entirely cut

off, as some is obtained from the American tropics.

Tests show that on insects for which rotenone dusts containing from 0.75% to 1% rotenone had been used in the past, dusts containing 2% Lethane and 0.4% rotenone were equally effective. With more Lethane, even less rotenone may be effectively used.

The same synthetic organic product combined with pyrethrum, another well-known imported insecticide ingredient, has been found effective in controlling such life as loopers on cabbages and leafhoppers on beans and many other vegetables. In the dusts, the Lethanes with rotenone or pyrethrum are mixed with a neutral inert filler such as clay or talc.

*Science News Letter, July 10, 1943*

## MEDICINE

## Vitamin A Not a Real Aid In Correcting Color Vision

► VITAMIN A failed to produce any significant improvement in the color vision of 58 R.O.T.C. cadets in experiments conducted in Baton Rouge, La., by Dr. J. H. Elder of Louisiana State University. The cadets had various degrees of weakness in color vision.

The vitamin A was given the cadets in capsules which they were required to swallow at a dispensing station so that there could be no possible doubt that they took the vitamin at the prescribed intervals and in the specified doses, which were 25,000 international units daily for eight weeks.

"It seems improbable," Dr. Elder commented in reporting his results (*Science*, June 18), "that administration of the vitamin for longer periods of time would change this result, although observations are being continued on several subjects."

This study, Dr. Elder explained, does not entirely dispose of the possibility that a few men, perhaps with minor color vision defects, may improve slightly, but the number who could use vitamin A for this purpose is so small as to be negligible.

In a preliminary study by Dr. Elder of 16 students with defective color vision, who had been unable to pass tests of the Army Air Corps and who were quite anxious to do so, two were able after taking vitamin A to pass the tests. These two were men with very slight defects.

*Science News Letter, July 10, 1943*

## PHARMACY

## B<sub>1</sub> Improves Color Vision; Vitamin A Role Confirmed

► VITAMIN B<sub>1</sub> improves color vision more than twenty per cent in men rejected by the armed forces for color blindness, research at the Philadelphia College of Pharmacy and Science indicated.

The experiments reported by Drs. Donald P. LeGalley and J. W. E. Harrison (*American Journal of Pharmacy, March*) also confirm a report by other scientists that vitamin A produces a like improvement.

Still another vitamin, B<sub>2</sub> or riboflavin, was tried on the color blind men but it failed completely, producing a negligible improvement of less than three per cent.

The experiments are evidently the first indication that vitamin B<sub>1</sub> (thiamin) can

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improve color vision. Although only a small group of four men received the B<sub>1</sub> treatment, the scientists believe that since results within a group check one another, the average result is fairly reliable. Doses of about eight times the normal minimum daily need were given. Before treatment the color blind subjects were presumed to be on an average diet.

With both vitamin B<sub>1</sub> and A, nearly the improvement possible occurred during the first 10 weeks of treatment.

After improvement had levelled off, the experimenters switched the dosages so that the vitamin B<sub>1</sub> group was getting vitamin A and vice versa. This change improved color vision in both groups by more than an additional ten per cent.

A control group was given no vitamins as a check to see whether improvement was due to the subjects "learning" the charts used for testing. Various checks showed that memory could be ruled out as a factor in the results.

*Science News Letter, July 10, 1943*

whistle, large knife, pocket compass and "heat tablets."

The tablets contain chemicals which will burn strongly enough to light a fire even with damp wood.

This beltful of supplies is only one of five new types of emergency equipment adopted by the Canadian Air Force.

There is also a kit to be carried in the plane, much like the personal belt kit but on a grander scale. It includes such additional items as a hand axe, folding stove, cooking pots and insect repellent.

For airmen who may have to land in a winter wilderness, a winter kit is now in production. Equipment designed for life in the arctic ranges from anti-glare eye shields to a warm sleeping bag.

A small emergency radio, also to be carried in Canadian aircraft, transmits either an automatic SOS or code.

When forced down at sea, the fliers have a kit attached to the rubber dinghy which greatly boosts their chance of survival. Signaling devices include marine distress signals, matches that burn with a greenish glare, yellow skull caps, signal flag and fluorescent sea markers.

Rubber stoppers are provided to plug leaks in case enemy airmen machine-gun the dinghy.

*Science News Letter, July 10, 1943*

#### MEDICINE

## Childbirth Made Safer

**A simple test which adds to the safety of continuous caudal anesthesia, the new method of painless childbirth, has been developed.**

➤ A SIMPLE TEST which adds to the safety of continuous caudal anesthesia, the new method of painless childbirth, is announced by Dr. Nathan Block and Dr. Morris Rotstein, of Sinai Hospital, Baltimore (*Journal of the American Medical Association*, June 26).

In this new childbirth anesthesia method, developed by Dr. W. B. Edwards and Dr. R. A. Hingson, of the U. S. Public Health Service, a pain-killing chemical is dropped into the caudal canal near the base of the spine. This produces a local anesthetic effect somewhat like that given for pulling a tooth without gas. The anesthesia is limited to the nerves affected in childbearing, leaving the mother conscious and comfortable.

Although some thousand mothers have now had their babies safely with this new style of anesthesia, there is danger of the anesthesia getting into the spinal canal instead of the caudal canal.

If this happens, the mother may die.

The danger can be avoided, the Baltimore doctors find, by injecting a salt solution before the anesthetic and determining the rate at which the salt solution flows into the body. If it flows faster than 150 drops per minute after three minutes, the needle has probably been injected into the spinal canal.

Contrary to their expectations, they found from tests under identical conditions that the salt solution will flow into the spinal canal at a rate almost too fast to count, averaging about 230 drops per minute. In most of the cases they studied, the solution flowed into the caudal space at a rate between 80 and 110 drops per minute.

They report success with the anesthetic method in 100 childbirths and 11 obstetric surgical procedures. The preliminary salt test was done in the last 69 cases.

*Science News Letter, July 10, 1943*

#### AERONAUTICS

## Flying Kit Completed

**Broad belt around the waist of Canadian fliers will provide emergency supplies. Five new types of emergency equipment have just been adopted.**

➤ EMERGENCY equipment in a broad belt to be worn around the waist is now being distributed to Canadian fliers. The new personal kit is worn under the flying clothes and adds little bulk, being only an inch thick.

It contains gum of high caloric value, eight bars of chocolate and two packets of special biscuits—enough food for three days; also included are matches, complete fishing kit, signaling mirror, medical kit, smoke generators, plastic

## The WAR on CANCER

by Dr. Edward Podolsky

*Formerly of Fifth Avenue and Flower Hospital Medical Staffs, now a Captain in the Armed Forces.*

Realizing the need for a lucid summation of the latest findings in the battle against Cancer, Dr. Podolsky has brought to date the various methodologies of X-Ray, Cyclotron, Radium, Surgery and Refrigeration. He pays particularly interesting attention to the effect of diet and the most recent progress made along chemical lines in establishing the probable causes of this disease. Although this volume is written in an interesting non-technical style, it justifiably merits the attention of a professional audience because it embraces the salient facts of a continuing war that can only cease when Science presents its own terms of Unconditional Surrender.

We recommend this book with the assurance that its completeness will satisfy those who have long desired an authoritative account of the battle against Cancer brought up to date.

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