

ENTOMOLOGY

Mold Chemical May Kill Insects and Mites

► A MOLD chemical distantly related to streptomycin may turn out to be a good insect and mite killer, Drs. George S. Kido and E. Spyhalski have discovered in tests at the Insecticide Testing Laboratory of the Wisconsin Alumni Research Foundation in Madison, Wis.

The chemical is called antimycin A. It comes from an unidentified species of *Streptomyces*. Streptomycin also comes from a species of *Streptomyces*.

The mold chemical kills insects that eat it. It does not kill just by being in contact with the insects' bodies. Houseflies sprayed with a solution of the chemical showed no ill effects, whereas 38% of those that fed on a ball of cotton saturated with it were dead in 24 hours.

Antimycin A is also rather choosy about which insects it kills. German cockroaches and the larvae of the webbing clothes moth were not affected, but carpet beetles were stopped from eating fabrics treated with it.

Among agricultural pests, the chemical was effective against second instar Mexican bean beetle larvae but not against the fourth instar Southern army worm.

Antimycin A can kill other pests besides insects. It is about three or four times more effective against the red spider mite than the commercially available anti-mite chemical, di (p-chlorophenyl) methyl carbino, or DMC for short.

Details of the tests of this new mite and insect-killing antibiotic appear in the journal, *SCIENCE* (Aug. 11).

Science News Letter, August 19, 1950

MEDICINE

Anti-Tuberculin Vaccine Traced Through Body

► BCG vaccine against tuberculosis has been made radioactive and is now being tested by Dr. L. Strom of Stockholm.

The radioactive vaccine was made in order to trace its path in the body.

TB germs for the vaccine were made radioactive by growing them in a medium containing radioactive phosphorus. When injected into the muscles or bellies of guinea pigs, these radioactive TB germs were found to spread very rapidly.

Some experiments were made on humans, injecting the radioactive vaccine into the skin. A Geiger-Muller counter specially devised for use on the skin traced the course of the vaccine. It followed the lymph gland drainage of the area and spread within a few minutes.

The activity of the vaccine is now being investigated in the blood and urine. Presence of radioactive phosphorus in the urine

may be the result of the disintegration of the germs and their elimination from the body.

BCG vaccine, named for bacteriologists Calmette and Guerin, is made of living tuberculosis germs that have been greatly weakened. As a result, they should produce immunity against the disease without producing the disease. The vaccine has been more widely used in Europe than in the United States.

His studies were reported at the International Congress on Pediatrics.

Science News Letter, August 19, 1950

MEDICINE

Potassium Doses For Infant Diarrhea

► LIVES of many babies may in future be saved by a new treatment for infant diarrhea devised by Dr. Daniel C. Darrow of Yale University in New Haven. The treatment consists in giving doses of the mineral, potassium.

"The infants looked much more vigorous while the diarrhea continued and did not collapse in the manner that has been observed when no potassium is given," he reported.

"Deficit of potassium is quite regularly present in severe diarrhea," he stated, "and responds to appropriate replacement treatment with a striking decrease in mortality."

The potassium treatment is intended to overcome the acidosis which occurs in infant diarrhea. This acidosis has usually been considered the result of two factors: 1. loss of alkaline intestinal secretions in diarrhea, and 2. failure of the kidneys to secrete an acid urine as they normally do.

These two factors do not adequately explain the acidosis, Dr. Darrow and co-workers found. Instead they discovered that a curious disturbance occurs in cell metabolism as a result of which sodium, the chief alkali of the blood serum and the lymph, or fluid between the cells, passes into the body cells. This depletes the blood alkali and causes acidosis.

At the same time potassium, a normal ingredient of cell fluid, is replaced by the entering sodium and is lost by the body. It is not clear which comes first—the loss of potassium from the cells or the entry of sodium into the cells. Both seem to occur simultaneously.

Dr. Darrow tried giving potassium on the theory that this might check the loss of potassium from the cells and thereby prevent or impede the entry of sodium into the cells.

This treatment, he found, tended to correct the acidosis as well as to restore normal cell function.

His studies were reported at the International Congress on Pediatrics.

Science News Letter, August 19, 1950



MEDICINE

Be Quiet After Radiation Exposure

► ANYONE exposed to radiation from an atomic bomb explosion or an overdose of X-rays should lie down and keep quiet if possible. Experiments with rats at the Naval Radiological Defense Laboratory in San Francisco, Calif., show that irradiation with X-rays is much more killing if it is followed by violent exercise.

After irradiation with 600 roentgen units all the nonexercised rats survived, but among those with the same dosage who had less than 30 minutes of exhaustive exercise a day, 50% died, Drs. D. J. Kimeldorf, D. O. Jones and M. C. Fishler report in the journal *SCIENCE* (Aug. 11).

When the dosage was upped to 700 roentgen units, 44% of the resting animals died, but this dosage was fatal to 92% of those who exercised.

Not only did the rays kill a greater proportion among the exercised animals but those that died survived for a shorter time than did the animals without exercise.

Reason for the increased lethal effect of the rays on exercised animals is believed to be the raised metabolic level after exercise. Previous experiments showed that fertilized ascaris eggs, frogs, chick embryos and newborn rats have greater resistance to radiation when kept at low temperature and thus at lowered metabolic activity.

Science News Letter, August 19, 1950

INVENTION

Device Helps You Detect Your Own Bad Breath

► YOU can smell your own breath with an invention for which the government issued a patent recently. No longer will it be necessary to ask a friend if your breath is bad.

With this device, a sample of the breath from within the mouth is taken. Then the sample is discharged into a nostril. The sampler is a tubular affair, constructed in two parts, one of which slides within the other.

To use, one end in which there is a small opening is held between the lips. The other half is drawn outward to create suction to pull air from the mouth into the device. By reverse action, this mouth-air is then forced into the nostril.

Any unpleasant odor in the breath is easily detected, the inventor claims. He is Robert M. Glidden of Haddonfield, N. J., and the patent number is 2,517,657.

Science News Letter, August 19, 1950

E FIELDS

MEDICINE

Terramycin Effectively Treats Pneumonia

► "EXCELLENT" results in every case of pneumonia treated, with no failures, is the latest box score for one of the newest mold drugs, terramycin.

The results are reported by Drs. George W. Melcher, Jr., Count D. Gibson, Jr., Harry M. Rose and Yale Kneeland, Jr., of Columbia University College of Physicians and Surgeons and Presbyterian Hospital, New York, in the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* (Aug. 12) in Chicago, Ill.

These doctors used the new drug to treat 18 patients with lobar pneumonia due to a pneumococcus and seven patients with atypical or virus pneumonia.

A "dramatic" fall in temperature occurred in all but one patient within 24 to 36 hours after the first dose. In many cases the patients began to feel better even before the temperature started to drop. One man had completely lost the pain in his chest and his cough was much better within 12 hours after the first dose of the new drug.

Science News Letter, August 19, 1950

GEOLOGY

Old Faithful Not as Faithful as Believed

► OLD Faithful, hitched all winter to a newly-developed "geyser counter," has shown it is not so faithful after all.

The overall average for time intervals between 2,606 eruptions, clocked by a gadget put together by Yellowstone Park rangers from a seven-day clock and an electrical magnet, was 63 minutes and 15 seconds, Ranger Ruben O. Hart writes in the Park bulletin, *YELLOWSTONE NATURE NOTES* (July-August).

But Old Faithful waited only 38 minutes in giving its quickest repeat performance. It stalled for 88 minutes on another occasion.

Science News Letter, August 19, 1950

WILDLIFE

Good Duck-Hunting Foreseen for 1950

► THERE was good news for most of the nation's duck hunters recently.

Summer surveys on the breeding grounds of wild ducks and geese from the Canadian border north to the Arctic Sea show that there will be nearly as many waterfowl winging south over three of the country's

four major flyways this fall as in 1949. Results of the annual census were reported by Albert M. Day, director of the U. S. Fish and Wildlife Service.

Fair weather and favorable breeding conditions seem to have offset a threatened 25% drop in continental waterfowl populations reported last winter by wildlife biologists in the annual southern census.

For the Pacific Coast, Great Plains and Atlantic flyways, the Fish and Wildlife men now report, the wildfowl situation appears to be the same or only slightly less favorable than last year. Only in the summer breeding areas supplying ducks to the Mississippi Valley flyway has a "moderate" decrease been found.

The waterfowl surveys, this year more extensive than ever before, are made in cooperation with the Canadian Wildlife Service and the various state and provincial governments of the U. S. and Canada.

Science News Letter, August 19, 1950

GENERAL SCIENCE

War Production Depends on Factories All Over U. S.

► THE job of stepping up production of airplanes, automobiles, war tanks and other complicated equipment needed in war emergencies is not as simple as merely going from an eight-hour to a 24-hour workday. The output of most large concerns depends upon a supply of parts from widely scattered smaller manufacturers.

Airplane production, for example, depends upon the availability of engines. Engine production depends upon a plentiful supply of parts manufactured by many companies. The output of these manufacturers of parts depends upon the availability of raw materials.

Among the engines widely used by the armed services are those manufactured by Pratt & Whitney Aircraft, East Hartford, Conn. A survey just made by this company shows that its subcontractors and suppliers have reached a total of 4,604 concerns. About half of them are located in New England. The others are distributed from New York to California and Texas.

As an example of engine work done outside the East Hartford area, the heat measuring device used on Pratt & Whitney jet engines is made in Springfield, Mass. Also in this same city a concern employing 450 men cuts gears on the Pratt & Whitney engines. And a Connecticut firm makes the precision screws and pins for the same power plants.

Manufacturers of all types of automotive vehicles depend similarly on many widely scattered makers of small but essential parts. A relatively few centers in the United States are recognized for automobile production. Actually parts for automobiles are manufactured throughout the nation by firms located in practically every state.

Science News Letter, August 19, 1950

VETERINARY MEDICINE

BW, Wartime Weapon, Helps Combat Newcastle Disease

► BW, dread wartime weapon which spells out as bacteriological warfare, is being turned to a peacetime use in Berkeley, Calif., by veterinarians seeking new ways to combat a serious, fast-spreading ailment of chickens, Newcastle disease.

Air saturated with a weak strain of the virus of Newcastle disease is fed to young chickens in special pens at the University of California. The disease spray, instead of striking down the chickens, makes them immune to more virulent forms of the Newcastle virus.

The experiment, being carried on by Dr. Raymond A. Bankowski and associates on the University research staff, is described in the *JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION*.

Virus used in the air-borne sprays was weakened by growing it for long periods in the laboratory in a special broth preparation. It seemed to lose most of its disease-producing properties while retaining the power to immunize.

Ordinarily, chickens are vaccinated against Newcastle disease much as humans are protected against smallpox. The disease virus is injected under the skin.

In the new method the young birds are kept in virus-laden air for periods up to an hour, being gassed by disease germs as a protection against a poultry plague.

Science News Letter, August 19, 1950

SOCIOLOGY

Outlook for Marriage: No War Boom This Time

► THERE will not be much of a war boom in marriages this time. The reason is there are not very many spinsters and bachelors left in the country.

"At present somewhat more than two-thirds of the population at ages 15 and over is married," report statisticians of the Metropolitan Life Insurance Company here.

The number of married people in the United States, estimated at almost 75 million, is now at an all time high. Only 10 years ago there were 14 and one-half million fewer married men and women in the nation.

While most of the increase in the married population has come from the war and postwar boom in marriages, some of it has come from improvement in mortality which has resulted in fewer widows and widowers.

The number of weddings has been declining from the postwar peak which, the statisticians say, is not surprising in view of the marked depletion of single men and women throughout the country.

Science News Letter, August 19, 1950