

## AGRICULTURE

**Witchweed From Africa Threatens Corn Crops**

► WITCHWEED, a parasitic plant that attacks corn and other plants of the grain family, threatens to become a serious menace to farmers in this country.

The weed grows to a height of about eight to ten inches and is a native of Africa that has somehow reached the United States. It was found last fall in several counties of North Carolina and adjoining South Carolina, Dr. M. R. Clarkson, Agricultural Research Service, U. S. Department of Agriculture, reported to the House Subcommittee on Appropriations in hearings recently made public.

The witchweed grows from a microscopic seed which germinates only in the presence of the roots of one of the host plants. It attaches itself to the roots of its host plant and draws life from the plant for about three weeks when it emerges above the ground and forms leaves, Dr. Clarkson reported.

The plants seed shortly afterwards and can produce from 100,000 to 500,000 seeds each.

Agricultural officials who studied the plant in Africa liken it to the corn borer in its potential threat to the country's corn crop. No effective control measures have yet been found to keep it from spreading, they emphasize.

In Africa, one method used is planting a trap crop which induces the witchweed to germinate and grow. Then when the weed has come out of the ground, the entire crop is destroyed before the weed has a chance to seed.

"That is a procedure which may be entirely uneconomic to the owner of the land," Dr. Clarkson said.

In the coming season the Department will urge the destruction of all weeds in infested fields to prevent further seeding, he added.

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## PSYCHOLOGY

**Rat Teaches Solution of Problem to Another Rat**

► A RAT can learn from another rat, or to say it in another way, it is possible for one rat to teach another.

This finding, which is in conflict with the conclusions of many animal psychologists, is reported in the *Journal of Abnormal and Social Psychology* (March), by Dr. Russell M. Church of Brown University in Providence, R. I.

Many psychologists, Dr. Church explains, have believed that animals are unable to learn to solve problems by watching a trained animal perform the trick. It was thought that they could learn only by "trial and error." This means that the animal's native tendency to activity would cause him to move about until he accidentally did the right thing to solve the problem. When the

animal touched the right lever, opened the right box, or made the correct turn in a maze, he would receive a reward. After that he would tend to repeat the action which had been rewarded.

Dr. Church found that a rat placed in a maze behind a "leader" who had already learned to make the correct turn to reach the reward of a drink of water, could learn to follow the leader and so obtain the reward.

To make certain that the leader's learning could be transmitted to the follower, a new cue was introduced to direct the leader to the reward. If he turned in the direction of two red lights, he received the reward. In other experiments, the leader had to learn to go to the arm of the maze where the lights were off.

Then the leader was removed from the maze. It was found that the follower rat would act on the light cue in the way that had been learned by his leader.

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## SURGERY

**Plastic Surgical Thread Holds Strength Longer**

► A SURGICAL THREAD made of Dacron plastic holds its strength longer than presently used materials but unfortunately "remembers" to untie itself automatically, Dr. Raymond W. Postlethwait, professor of surgery, Duke University School of Medicine, Durham, N. C., reported to the American College of Surgeons regional meeting in Washington.

The plastic thread, which gave good results in animal surgery, has a "memory" of the time when it was stretched out straight and, after being left inside the body for two weeks, begins to untie itself. A knot made up of three loops tied in square knot fashion can completely undo itself in that time, Dr. Postlethwait reported.

The study of Dacron was made as part of the continuing search for the perfect suture material to replace catgut, cotton and silk, the three types commonly used today.

Surgeons are looking for a suture material that will combine the good qualities of all three and keep its strength for four weeks inside the body before being absorbed by the surrounding tissues. Although Dacron does not look like the answer, other plastic fibers such as Teflon and Orlon will be tested, the surgeon reported.

Dr. Postlethwait and his associate, Dr. James Schauble, also tried sterilizing surgical thread with radiation from a 3,000,000-electron-volt Van de Graaff generator instead of heat.

On thinner threads the irradiation works well without damaging the fiber strength, but large diameter threads are weakened by it, he reported. The difference is not great but it is a factor that should be studied if irradiation sterilization becomes a common practice, he said.

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**IN SCIEN**

## PUBLIC HEALTH

**What Happened to All The Polio Vaccine?**

► ALMOST QUICKER than you can roll up your sleeve the 26,000,000 backlogged doses of polio vaccine have been reduced to nothing and some cities are being forced to postpone their inoculation programs against summertime's biggest crippler.

The shortage was not expected and even if there had been earlier warning signs, it is doubtful whether the drug companies producing the vaccine could have done anything about it.

The underlying reason is that each lot of vaccine takes a total of 140 days to go through all the processes of manufacturing and testing that are required, it was learned from the Eli Lilly Company, Indianapolis, Ind., the nation's largest producer of the vaccine.

As recently as Jan. 1 of this year the huge quantity of perishable vaccine piling up in drug stores and warehouses was a serious problem to the drug companies.

Unlike many other drugs, the vaccine can only be kept for six months before the manufacturer must discard the supply on hand and replace it with a fresh batch.

As late as Jan. 15, the Eli Lilly Company was forced to destroy 27,000 doses of the vaccine because of public apathy in using it, the spokesman said.

Although production was slowed up a bit in the fall, there are now 30,000,000 doses in the Lilly production line which will be available by the end of June. The present situation, in the opinion of the manufacturer, could be better termed a "delay" rather than a shortage.

The skyrocketing public demand for the vaccine has been brought about by the appeals of the American Medical Association, the National Foundation for Infantile Paralysis, the U. S. Public Health Service and other groups. By Feb. 15, the 26,000,000 dose backlog was down to 15,000,000 and has completely disappeared by now.

Dr. Leroy E. Burney, Surgeon General of the U. S. Public Health Service, recommends the following steps for the most effective use of presently available supplies between now and the summer months:

In areas where the supplies are limited pregnant women and persons under 20 should get priority. Communities should begin their programs with first injections as supplies become available, rather than waiting until they get enough vaccine for the second and third shots. Also, planning groups should stagger the dates of their vaccination drives to help even out the available supplies, he said.

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# CE FIELDS

## MEDICINE

### Heart Attack Deaths Increase Among Women

► SINCE 1940, a startling change has occurred in the number of men versus women who die from heart attacks, Dr. Wilbur A. Thomas, department of pathology, Washington University, St. Louis, Mo., reports in *Nutrition Reviews* (April).

Before 1940 there were two men for every woman victim, but since then women victims have so increased that the ratio is now about one to one, he reported.

This and other unexpected facts were revealed by a study of 17,000 autopsies performed between 1910 and 1954 on victims of heart disease. The study was made to determine the prevalence of acute myocardial infarction, one of the most common causes of death in the United States.

The condition is caused by an inadequate supply of blood to the heart muscle and results in "heart attacks" that usually bring severe pain and disablement. Twenty-five percent to 35% of the victims of these attacks die from them.

Another unexpected finding concerns the difference between white and Negro populations, with five times as many white victims as Negro ones. A difference between the two races was known to exist before, but this latest study showed that the difference is increasing rather than decreasing, Dr. Thomas reported.

He cautioned against attributing it to genetic factors until every other possibility, especially dietary habits, has been exhausted.

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## MEDICINE

### Do Not Despair if You Hear Strange Noises

► IF YOU ARE HEARING strange noises even when in a silent room do not despair, Dr. Albert P. Seltzer, assistant professor of otolaryngology, University of Pennsylvania Graduate School of Medicine, Philadelphia, reported in *Today's Health* (March), published by the American Medical Association.

Head noises, known medically as tinnitus, are often more unpleasant than real noises and may start without warning. They may be soft and purring or may sound like wood being sawed or steam escaping from a train shed, the specialist reported.

Deaf people have the highest rate of these noises but they appear in people with normal hearing also. Some hear them when falling asleep, others when in the early stage of anesthesia. The noises can be heard in

one ear or both, and to some people they resemble the words of songs.

The causes of tinnitus are as numerous as the types, Dr. Seltzer said.

Unlike normal sound which results from sound waves in the air striking the eardrum, the head noises occur when something else starts the chain events.

Wax or foreign substances blocking the ear canal, middle ear infections, and abnormal passageways between the ear and the throat are sometimes responsible for the noise, he reported.

But you do not have to "grin and bear it" since all of these can be corrected medically, he added.

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## METEOROLOGY

### Dishpan Hurricanes Help Study of Large Storms

► MINIATURE HURRICANES made in a dishpan are helping scientists understand the qualities of the large storms, Dr. Dave Fultz and Robert Kaylor of the University of Chicago reported in Chicago.

They told the American Meteorological Society, meeting at the University of Chicago, that the laboratory-produced hurricanes were "similar in many respects" to those so destructive in real life. The models are small whirlpools of water in the pan.

The tiny storms are produced by simulating hurricane conditions—warming at the center, cooling on the outside, and slow rotation. A camera rotating at the same rate, one revolution every two minutes, photographs the patterns made by the red dye and aluminum powder used to trace the water currents. A delicate heat-measuring device called a thermocouple measures the water temperature at various points.

As in real hurricanes, the vortex, or center, of the miniature whirlpool becomes slightly funnel-shaped, surrounded by a fast swirl of water that corresponds to high winds.

As air does in a full-sized hurricane, water rises through the funnel, spreads at the top in a clockwise flow, then sinks to the bottom and returns as a counter-clockwise, or cyclonic, flow.

The tiny, man-made hurricanes are only a ten-millionth the size of the real storms. The 16-inch dishpan represents 500 miles; the two and a half inches of water with which it is filled duplicates, in scale, 60,000 feet of the earth's atmosphere.

A small electric heater in the dishpan's center and a jacket of circulating cold water on the outside rim simulate the temperature conditions of hurricanes.

The laboratory findings are expanded in scale and applied to air masses through mathematical equations.

One unnatural feature, the two scientists point out in their first report of the project, is that the entire model hurricane is surrounded by the pan walls, thus producing a closed circulation system not true of actual storms.

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## PSYCHIATRY

### Mentally Ill Do Not See as Well at Night

► MENTAL PATIENTS cannot see as well at night as can normal persons.

The effect of mental illness on night vision is equivalent to putting a smoked glass before the person's eyes, Dr. G. W. Granger, psychologist of the Institute of Psychiatry, Maudsley Hospital, London, said in a report to *Science* (March 15).

Similar effects are produced on night vision by lack of oxygen as in high-altitude flying, by deficiency of sugar in the blood due to insulin and by alcohol, Dr. Granger pointed out.

It seems possible, he indicated, that some of the effects of mental illness may reflect changes in the nervous system similar to those produced by oxygen deficiency, insulin or alcohol. In fact, oxygen deficiency has been reported in psychotics and to a lesser extent in neurotics and one study reported more insulin in psychotic patients under stress than in normal ones.

The findings, he concludes, call for very little revision in accepted theories of visual dark adaptation and night vision. On the other hand, the results may be of much greater interest to psychiatrists and psychologists because they suggest that in the future it may be possible to use tests of night vision as an objective aid in diagnosis of mental illness.

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## AGRICULTURE

### Gibberellic Acid Stimulates Grass Growth

► GIBBERELLIC ACID, instead of more fertilizer, may be what your grass needs if it does not grow.

Gibberellic acid is a plant hormone that has been known to the Japanese for 20 years but has not attracted the attention of American and European plant scientists until recently.

Tests of the compound on Kentucky bluegrass show that it can bring growth and color back to the plants within a few days, Drs. Curt Leben, Eli Lilly and Company, Greenfield, Ind., and Lela V. Barton, Boyce Thompson Institute for Plant Research, Yonkers, N. Y., report in *Science* (March 15).

Plots of the blue grass were sprayed with solutions of the acid in October when they were in their slow growth stage. Within four days new shoots had developed and the grass turned a brighter green. After it was cut, both the fresh and dry weights were higher than untreated samples, especially if the plants had been treated with fertilizer as well as the hormone.

The tests show that the acid may be useful for getting grass to grow in the fall and spring, as well as in the winter in warmer climates, the researchers conclude.

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