

AGRICULTURE

Blue Mold of Tobacco Controlled by New Spray

► BLUE MOLD of tobacco, a destructive disease of seedlings also known as downy mildew, can be controlled by a simple spray of an organic fungicide recently placed on the market, Dr. P. J. Anderson of the Connecticut Agricultural Experiment Station reports (*Science*, Oct. 30).

Hitherto the best control has been fumigation with vapors of either benzol or paradichlorobenzene. This, however, requires the construction of tight enclosures around the seed beds, to prevent the gas from leaking out before it has done its work. A simple spray that can be used in the open is preferable, if effective.

The compound used in Dr. Anderson's spray is known chemically as ferric dimethyl dithiocarbamate. "Fermate" is the shorthand convenience-name under which it is marketed.

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MEDICINE—PSYCHOLOGY

Victim of Hot Chowder Aids Study of Ulcers

► NEW INFORMATION on peptic ulcer has been obtained from a human guinea pig, victim of a bowl of hot clam chowder. His esophagus obliterated as a result of drinking the scalding stew, the patient must be fed through a hole in the stomach. Through the same opening, observations ordinarily made only on laboratory animals are possible.

With relatively high incidence of stomach ulcer among troops subjected to the nervous tensions of modern war, the research results of Dr. Stewart Wolf of the Army Medical Corps and Dr. Harold G. Wolff of New York, reported (*Journal of the American Medical Association*, Oct. 31), confirm the belief that emotional conflict is a causative factor in forming ulcers.

Step-by-step observations of the goings-on in the patient's stomach during emotions of anxiety, hostility or resentment, showed increased acid secretion, more violent stomach movements and engorgement of the stomach lining with blood.

In this condition, small breaks in the stomach lining were induced by very trifling injuries, such as might be made by a sharp fragment of food. Bleeding points also occurred spontaneously, due

to the violent contractions of the stomach wall.

Most of these small erosions heal quickly unless there is a break in the insulating layer of mucus which ordinarily protects the stomach lining from the secreted acids. But prolonged exposure of a lesion to the acid stomach juice results in formation of chronic stomach ulcer.

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ENGINEERING

Welding in Army Airplanes Must Pass "Tee" Weld Test

See Front Cover

► EVERY WELDER working on Army contract material must submit to the "tee" weld test shown on the front cover of this week's SCIENCE NEWS LETTER.

The test of a standard Army weld sample is made at irregular intervals on the work of each welder. The sample shown failed, because part of the break occurred in the weld rather than in the parent material. The welder must now produce a satisfactory weld sample before he can again work on Army aircraft material.

This official photograph was made by the Office of War Information in the laboratory of a large western aircraft plant.

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ENGINEERING

Highest Engineering Award To G. E. Research Director

► HIGHEST AWARD in the field of engineering, the John Fritz Medal for 1943, will be presented to Dr. Willis Rodney Whitney, director emeritus, General Electric Company's research laboratories, and nonresident professor of chemical research of the Massachusetts Institute of Technology.

The medal will be awarded to Dr. Whitney for "distinguished research" and for "co-ordinating pure science with the service of society through industry."

Dr. Whitney has been associated with the G. E. laboratories since their inception in 1900, and is credited with being mainly responsible for the up-building of these pioneering institutions and for their outstanding achievements during the intervening years in both pure and applied science. He has published many chemical papers of his own and has been the recipient of many previous awards and honorary degrees.

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IN SCIENCE

PUBLIC HEALTH—GEOGRAPHY

Distribution of Physical Defects to Be Studied

► SEARCH for the reason why draft boards are having to turn down more men for bad teeth in New England, heart trouble in the Northwest, goiter in the Great Lakes region and blindness in Texas, will soon be started at Columbia University, under the direction of Dr. Harry L. Shapiro, the American Museum of Natural History.

The geographical distribution of characteristic physical defects is partly due to heredity, partly to social or local geographic conditions, and partly to a mixture of the two, Dr. Shapiro believes.

The fact that mental disorders are found most frequently in Maine, Virginia, the Carolinas, Tennessee and Mississippi, and the high incidence of venereal disease, drug addiction and alcoholism in the Gulf States and the Southeast is probably due to environment.

But the deafness found in the Northwest and New England and the lack of weight characteristic of the east coast and of California may be hereditary.

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SEISMOLOGY

Earthquake in Ocean Missed Japan by 300 Miles

► A STRONG earthquake shock shook the bottom of the western Pacific late on Monday afternoon, Oct. 26, but missed the target. Epicenter was about 300 miles off the coast of the island of Hokkaido, Japan, U. S. Coast and Geodetic Survey seismologists reported after studying instrumental data collected telegraphically by Science Service.

The tremors began at 5:09 p.m., EWT; center of disturbance was given provisionally as in latitude 44 degrees north, longitude 152 east.

Observatories reporting were those of the Jesuit Seismological Association at Georgetown University, Spring Hill College near Mobile, Ala., and Fordham University; and the stations of the U. S. Coast and Geodetic Survey at Tucson, Ariz., and Ukiah, Calif.

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E FIELDS

CHEMISTRY

Lalor Fellowships Suspended for Duration

► AWARDS of the Lalor Foundation postgraduate fellowships in chemistry, among the most prized of aids to young research workers, will be suspended until after the war, it was announced at Wilmington, Del., by Dr. C. Lalor Burdick, director of the Foundation. Funds that would normally be granted each year will be accumulated into a reserve, permitting a larger number of young men and women to undertake their problems immediately upon the return of war-absorbed leaders in science to their peace-time posts.

The backlog thus established already provides for 15 fellowship awards in the first year of peace. Basic stipend of the Lalor Foundation fellowships is \$2,000.

Four final awards have just been made, all to young men engaged in research on wartime problems. They are: A. C. Bratton from the University of Texas, who will carry on his work at the Johns Hopkins Medical School; E. H. Frieden from the University of California, who goes to the University of Texas; F. J. Reithel from the University of Oregon, who will be at the St. Louis University School of Medicine; and J. R. Weisiger from the Johns Hopkins University, who will study at Harvard University Medical School.

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PUBLIC HEALTH

U. S. Leadership in Public Health Slipping

► THE UNITED STATES is in danger of losing, if she has not already lost, her position as leader in health protection for the people of the western hemisphere, Dr. Thomas Parran, surgeon general of the U. S. Public Health Service, reported from his findings on his visits to Mexico and to the Pan-American sanitary conference in Rio de Janeiro.

When air travel between North and South America was instituted some years

ago, the United States was greatly concerned over the possibility that yellow fever would be reintroduced to the country from South America.

The shoe is on the other foot now, and Brazil is rightly exercised and has made representations to our State Department because yellow fever mosquitoes and even the tse-tse fly, carrier of deadly African sleeping sickness, have been found on American airplanes entering Brazilian ports from Africa.

The Brazilian government, at a cost of \$2,000,000 and with aid from the Rockefeller Foundation which spent \$200,000, has eradicated both African and American yellow fever mosquitoes from all her port cities and from eight of her states. Only one United States port, Miami, Florida, has done anything like this, Dr. Parran said with chagrin.

Americans need to recognize, he declared, that continental health security and solid Pan-Americanism run on a two-way track. Brazil's vast accomplishment in wiping out yellow fever danger in her cities and states does not remove the danger of yellow fever striking Brazilians or other Americans unless we and other American nations wipe out the yellow fever danger within our own boundaries.

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PHYSIOLOGY

Lack of Vitamin K May Produce Abortion

► POSSIBILITY that vitamin K may play a role in some cases of abortion is suggested by research results discussed in *Nutrition Reviews* (November). The research was conducted by Drs. Robert A. Moore and Mary L. Miller of St. Louis, Isabelle Bittinger, of New York, and Louis M. Hellman of Baltimore.

Although this function of vitamin K has not yet been shown in humans, experiments with rabbits insufficiently supplied with vitamin K invariably resulted in abortion. All test animals had previously given birth to normal litters. Control animals receiving the same diet, but including vitamin K, continued to have normal births.

Internal hemorrhage of a type occurring in premature delivery in humans, was observed by microscopic examinations of tissue from the test animals.

Abortions resulted, it is concluded, from lack of the precursor to the clotting factor in the blood, called prothrombin—a condition associated with vitamin K deficiency.

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MEDICINE

Chemical Germ-Fighters May Come from Fish Sperm

► A NEW CLASS of chemical germ-fighters may come to take their place with chemicals from the dye vats and from microorganisms of the soil to help protect man against disease.

The new anti-germ chemicals have an animal origin, coming from fish sperm and calf sweetbread (thymus gland). Possibilities of their use to fight germs are reported by Dr. Benjamin F. Miller, Dr. Richard Abrams, Dr. Albert Dorfman and Dr. Morton Klein, of the University of Chicago department of medicine and Zoller Memorial dental clinic (*Science*, Nov. 6).

The fish sperm chemical is protamine, familiar in slow-action protamine insulin. The sweetbread chemical is histone. Both these chemicals attack germs by interfering with their respiration, thus suffocating the germs. One chemical acts in acid medium and the other in alkaline.

The Chicago investigators suggest that protamine might be used to "sensitize" certain germs belonging to the gram negative group, so that they could be successfully attacked by antibacterial compounds such as gramicidin, from soil microorganisms, which ordinarily is effective only against gram-positive germs.

Use of protamine or histone as chemical remedies is limited by their toxicity when injected into veins or the peritoneum, but a possible use for skin ailments or skin disinfection appears in the report that they have no apparent toxicity for such a tissue as the rabbit eye.

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BACTERIOLOGY

Bacteriologists Call For Movies as Teaching Aid

► THE CALL has gone forth from the Society of American Bacteriologists for motion pictures to aid in wartime teaching. With accelerated courses and shortage of teachers at many colleges, it is believed motion pictures on bacteria, rickettsiae, viruses, fungi and animal parasites would be helpful in stopping the gap.

The Society has appointed a committee, under the chairmanship of Dr. Harry E. Morton, of the University of Pennsylvania School of Medicine, to collect information on the usefulness and availability of such films.

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