PLANT PATHOLOGY

Soaking Cotton Seed Checks Plant Disease

COTTON seed in Egypt is being protected against one of the most troublesome plant diseases of that region, known as blackarm, merely by soaking it in water for 48 hours. This treatment replaces a much more expensive one using a mercurial dust, now unobtainable because mercury is needed in munitions and medicine for soldiers, relates A. S. Boughey, plant pathologist of the Agricultural Research Institute at Wad Medani, Anglo-Egyptian Sudan (*Nature,* Jan. 10).

Blackarm germs lurk on cottonfield stubble and debris, but are destroyed when the fields are flooded with irrigation water. When the mercurial disinfectant became unobtainable, it was decided to try the same "water cure" on the infected seed. It worked remarkably well.

The one drawback is that if the seeds cannot be planted immediately after soaking, it is necessary to go to the trouble of drying them carefully before putting them back in storage, lest they sprout and thereby spoil. The soaking also kills part of the seeds, but usually only a negligible percentage.

Mr. Boughey is of the opinion that the causal bacteria are not killed by any bacteriophage in the water, but are merely "smothered" by the cutting off of air.

Science News Letter, February 21, 1942

ENGINEERING—PHOTOGRAPHY

Robot Draftsman Does Work Of 307 Expert Technicians

A ROBOT draftsman in the form of the world's largest camera, comprising two rooms, has done 750,000 man-hours of work during the past year —equivalent to that of 307 technicians— at the Glenn L. Martin Co.'s airplane plant in Baltimore (*Chemical Engineering News,* Jan. 25).

The robot has now acquired a twin which will double the output of this work.

The camera takes the original working drawing, magnifies it to full size and photographs it directly on the metal, wood, cloth or other material that is to be used, which can then be cut out immediately without the labor and time of tracing out the pattern.

Or the camera may reduce the drawing to model size for wind-tunnel tests. The camera's scale may, in fact, be instantly changed to anything desired.

Diecasters are benefited because they no longer have to use shrink scales. The drawing can be enlarged just the proper amount to allow for shrinkage of the metal on cooling.

A photograph on an alloy of aluminum, which does not shrink or swell like paper, forms the actual base of jigs and fixtures on which airplane parts are assembled.

One room forms the body of the camera. The bellows and lens project into the other in which the drawing to be photographed is mounted. Reversely, an image of the negative is projected from the first room into the second onto whatever material is to receive it.

Everything is of heroic proportions. The photographs are developed in stainless steel tanks containing 100 gallons of liquid.

Science News Letter, February 21, 1942

ENGINEERING

Industrial Master-Minds Lick Cold-Steak Problem

MASS production methods, successful in automotive and war defense production, have been applied to the broiling of steaks, chops and chicken, so that 1,200 persons at a banquet may be served their food piping hot.

For several years the Flint Industrial Executives' Club, composed of leaders in the automotive field, have held monthly dinners in a local auditorium. Food prepared in hotels and restaurants was transported to the auditorium in portable steam tables, but often was cold when served.

Leaders of the club decided something should be done about it. Joseph Anderson, production manager of a large spark plug factory, conferred with mechanical master minds in the plant. Within two months they made blueprints and built a machine which turns out cooked steaks, chops and chickens under a conveyor cooking system. The inventors studied the best methods of cooking steaks in leading hotels to determine the amount of heat needed for broiling and then worked these into the electrically-operated conveyor system.

The capacity of the super-broiler is 2,400 steaks an hour, the equivalent of 1,200 pounds of beef, cooked at the rate of 40 steaks a minute.

With trained waitresses a complete meal can be served to 1,200 men, the average attendance at the club dinners, in 31 minutes.

Science News Letter, February 21, 1942

IN SCIEN

WILDLIFE

Save the Sharks! Strange Cry Raised on West Coast

SAVE the sharks! Such is the strange new conservation cry raised by commercial fishermen of the Pacific Coast.

It's all because of vitamins, Dr. Lewis Radcliffe, vice president of the Izaak Walton League of America, explained in a talk before a group of wildlife executives in Washington, D. C. During the past couple of years, the high vitamin value of the liver oil in certain shark species has been discovered. The soup-fin shark, once sought only as a source of an exotic Chinese delicacy, is especially prized. Its liver oil is bracketed along with codliver and halibut liver oils for highest vitamin potency.

However, other shark livers have their value. Even the humble but abundant dogfish shark yields a liver oil of at least moderate vitamin value.

Shark liver oil is especially sought for during the present war emergency, not so much because more vitamin pills are needed in this country but because it is very much in demand for lend-lease shipment to Britain, for the enrichment of margarine. Lower grade shark liver oils are also of use here, to heighten the vitamin values of stock feed, especially for dairy cattle and chickens.

All this has resulted in the sudden growth of a shark fishing industry on the West Coast. It used to be that if a fisherman chanced to pull in a shark of any kind, he would angrily chop off its tail, to make it bleed to death quickly, and kick the despised carcass back into the ocean. Now he carefully saves the liver. As recently as 1938, government reports did not give a separate listing to shark liver oil. In 1940, the catch amounted to 223,000 gallons, valued at $1,125,000.

Shark liver oil has higher vitamin potency at some seasons than at others. In the soup-fin shark, for example, it is lowest during summer, when the young sharks are being born. Hence, the present demand for protection of the shark fisheries includes also a call for restriction of the fishing season to the times when the liver oil has its highest natural vitamin potency.

Science News Letter, February 21, 1942

CE FIELDS

METALLURGY

New Tough Alloy Developed For Steel To Cut Steel

See Front Cover

MOLYBDENUM is being used in place of tungsten in a new tough alloy for cutting steel with steel.

On the front cover of this week's SCIENCE NEWS LETTER is pictured a molybdenum steel-tipped cutting tool shaving a layer of steel from the edge of a large ring of steel to shape a part for an electric generator.

The new alloy was developed by Westinghouse metallurgists because the United States produces about 90 per cent of the world's molybdenum while we have depended on China and Burma for much of our tungsten. It is predicted, however, that the substitution of molybdenum will be permanent, because the new tool steel seems to work as well as the old and is less expensive.

Science News Letter, February 21, 1942

PSYCHIATRY

Washington Pace Too Fast For Many Young Women

A SUBSTANTIAL but unknown number of young women who rushed to the nation's capital to take war-time Government jobs are cracking up under the Washington pace and have to be sent home, Dr. Winfred Overholser, superintendent of St. Elizabeths Hospital, in Washington, said.

Some can be straightened out by social agencies, a few are in such a state of nervous collapse they need treatment either in the psychiatric wards of the city hospital, or at St. Elizabeths, Dr. Overholser added.

These new Federal employes, he continued, often get into difficulties the minute they arrive. Their non-working hours are spent in a desperate search for living quarters. There are many more women than men, and this makes for social maladjustments. Many are lonely and homesick. Many have never worked before. The pace of the work in some of the Government agencies is heartbreaking.

These conditions, Dr. Overholser pointed out, may add up to nervous breakdown, especially if the young girl is susceptible or has a medical history of nervous disorders.

The Federal psychiatrist warned parents against allowing frail or nervously unstable daughters to seek work in the Washington whirl.

"They should try for work in their home towns first—if they already have jobs at home, they should stick."

Science News Letter, February 21, 1942

AGRICULTURE

Turkeys Face Hatchet For February 22

UNCLE SAM'S poultrymen in the Department of Agriculture are giving the turkey an unofficial plug as the correct entree for George Washington's birthday dinners.

It seems that despite the ravages of Thanksgiving and Christmas there are quite a few good birds left from the 1941 crop of 33,000,000 gobblers. Growers have kept many of their best birds as breeders.

The Department advises that the larger the turkey, the greater the proportion of cooked meat to dressed weight.

"For example, the cooked meat of a 13-pound turkey averages 28% of dressed weight, but the cooked meat of a 25- to 30-pound turkey averages 34% of dressed weight."

Science News Letter, February 21, 1942

GENERAL SCIENCE

Publication of Researches Of Military Value Delayed

WHAT amounts to a voluntary censorship of all scientific publications is announced by the National Academy of Sciences and the National Research Council (*Science*, Feb. 13).

Shortly after the fall of France an advisory committee on scientific publications headed by Dr. Luther P. Eisenhart of Princeton was formed. Investigators and editors who had questions as to whether a scientific paper might inadvertently aid our present enemies were invited to appeal to this committee for a decision.

This procedure now made public results in postponement of publication of information of possible military significance, but it is planned to allow publication of such material after the war with explanation and full credit to the scientists for their cooperation.

Science News Letter, February 21, 1942

CHEMISTRY

Gold Now in Treasury Could Help War Production

USE of some of the gold and silver in Uncle Sam's Treasury vaults for speeding America's munitions production was suggested by Col. Maurice E. Barker, chief of the U. S. Army's Chemical Warfare Service technical division, in an address before the College of William and Mary.

Because corrosion-resistant metals for chemical plants are scarce, Col. Barker advocates loan of the precious metals for linings of reaction kettles and stills. There is great danger that present glass-lined vessels may fail and stop necessary production of chemicals.

The gold utilized would not be used up and could be returned to the Treasury after the war.

Substitute food containers, replacing tin cans, could be made from cotton formed into sheets and bonded with plastics made from corn cobs, Col. Barker declared.

Science News Letter, February 21, 1942

CHEMISTRY

Slightly Poorer Gasoline Due to Restrictions

THE slightly inferior grade of gasoline that is now being sold at many filling stations has been necessitated by reduced rations of tetraethyl lead to refiners for civilian use. The government is conserving this material for military purposes.

No exact figures can be given as to the amount by which the octane ratings have been lowered, since they differ with the different companies and with different grades of gasoline. The companies have been left to portion out their allowances of the tetraethyl as they think best.

The government has made no official tests as yet. The time has been too short and samples have not been received.

Third-grade gasoline and lower grades are not affected because little or no tetraethyl is used in them.

The companies declare that the new gasoline gives just as good mileage as the old and that engines start just as easily. They give a little less rapid acceleration and a little more tendency to knock in pulling a heavy grade. The latter may be noticeable in high compression engines.

They point out that no one who bought the new gasoline has as yet detected the difference.

Science News Letter, February 21, 1942