

FORESTRY

Trees with High Rosin Yield Being Propagated

► PINE TREES selected for their high yield of rosin and turpentine, as choice rubber trees are selected for high latex yield, are now being propagated by workers of the Southern Forest Experiment Station, it is announced by three Station staff members, H. L. Mitchell, C. S. Schopmeyer and K. W. Dorman, (*Science*, Dec. 18).

In field tests leading up to the experiments, thousands of slash pine trees were examined and their yield of gum carefully determined. Twelve trees, that for some unknown reason produced two to three times as much as the average, were selected. Cuttings were made from them, which after a considerable period of initial failure, were finally induced to produce roots through a complex treatment with growth-promoting chemicals.

"It is reasonable to believe," the researchers comment, "that the development of high-yielding stands would contribute greatly to the solution of production problems which have long troubled the \$25,000,000 a year naval stores industry, which supports some 50,000 workers and their dependents."

Science News Letter, January 2, 1943

NUTRITION

Nutritional Conditioning For War Workers

► NUTRITIONAL CONDITIONING of those in the population who are likely to become workers in war plants has been advised by the Committee on Nutrition in Industry of the National Research Council. This advice was based partly on experience in Great Britain, Dr. Robert S. Goodhart, U. S. Public Health Service officer, told members of the American Dietetic Association.

In England it was found that volunteers rejected for the army could be conditioned at a physical development depot in six months. In accomplishing these results optimum diet, sleep, hard physical work and healthy recreation were combined. Extra milk and fruit were added to the presumably good army ration. As a result, 87% of the rejected men were accepted and passed into the army.

In our own country it has been found that many now working in war industries had previously been unemployed for some time and the change to fairly

long hours of concentrated toil imposed a heavy strain. The nutritional state of one group of new industrial workers was examined by a WPA group in New York City. Over 40% of the grown-ups of both sexes were found to be deficient in the amount of vitamin C in their blood. A number had a low blood cell content and were low on hemoglobin, the red coloring matter of the blood. This indicated they had not been getting enough iron in their food. Only one out of the entire group of 165 was completely normal as far as vitamin A was concerned.

A study of the diets of 1,100 workers in Southern California showed that over half did not get enough green and yellow vegetables and nearly half ate too few citrus fruits and tomatoes. Almost all ate enough lean meat but about one-third failed to get enough milk and a fifth were low in eggs consumed.

Science News Letter, January 2, 1943

ENTOMOLOGY

Soldiers and Workers Now Protected from Dog Flies

► U. S. Department of Agriculture entomologists have discovered three ways to beat the dog flies (*Stomoxys calcitrans* L.) that menaced soldiers and construction workers at camps in coastal areas.

The methods are: spraying marine grass with dilute creosote oil; dipping celery waste, and burying peanut litter. The shoal and turtle grass on the shores of bays and sounds, the litter left after baling peanut vines for hay and the dump piles of waste strippings from celery washing plants all had previously been "fly factories."

Dog flies do not carry disease to man, but their painful, stinging bites are enough of a nuisance to reduce efficiency 20 to 25%, according to a statement from the U. S. Department of Agriculture. Since the fly population has been reduced, contractors report increased efficiency of workers and estimate a savings at two camps alone of about \$500,000.

The dog fly is a serious pest to cattle, which is why the agriculture scientists started to battle it. In 1939 owners of livestock in one coastal area reported that one-fifth of their cattle died from loss of blood, hunger and weakness that resulted from annoyance by this pest. In efforts to escape the flies, cattle rush into the mud and water of swamps, and become mired so that they are often unable to free themselves.

Science News Letter, January 2, 1943

IN SCIENCE

GENERAL SCIENCE

Carnegie Allocated More Than Half Million for War

► MORE than half a million dollars, constituting nearly 20% of its year's total grants of \$2,831,650, have been allocated by the Carnegie Corporation of New York for activities directly related to the war, it is disclosed in Walter A. Jessup's first annual report as president.

The war-dedicated grants amount to \$533,565. The largest single item, \$100,000, has enabled the Joint Army and Navy Committee on Welfare and Recreation to conduct a variety of experimental programs as a basis for the activities of the Special Service Division of the War Department. Other grants included \$75,000 to the Red Cross, \$50,000 to the United Service Organizations, and \$12,500 to the American Council on Education.

Science News Letter, January 2, 1943

NUTRITION

Cattle Receive Aid From Bacteria in Digestion

► HOW CATTLE and sheep are aided by bacteria in digesting the crude fiber of the grass and fodder they eat has been demonstrated by a new technique devised by F. Baker of the Guilford County Technical College, in England. Mr. Baker's method is described in a statement from the Science Committee of the British Council.

Partially digested materials are removed from the animals' digestive tracts either in the slaughter house or from specially prepared surgical openings in living specimens. Under the polarizing microscope, differences in light direction through the materials indicate digested and undigested parts.

The role of the bacteria is indicated when iodine is added. Where the bacteria are active, purple spots show the presence of starch-like substances, formed within the bacterial cells out of the cellulosic materials in the crude fiber. Apparently it is this bacterial starch that actually furnishes the nutrition to the animals.

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CE FIELDS

AERONAUTICS

Sikorsky Receives Award For His Helicopter

➤ IGOR I. SIKORSKY, noted aircraft designer and engineering manager of the Vought-Sikorsky Aircraft Division of the United Aircraft Corporation, Stratford, Conn., is to receive the Sylvanus Albert Reed Award for 1942 in recognition of his contribution to aeronautics with a citation for his "creation and reduction to successful practice of a helicopter of superior controllability."

Ease of piloting the machine in all directions of flight, its ability to hover over one spot and to ascend and descend vertically, have been demonstrated many times. Mr. Sikorsky and others have pointed out the possibilities of the helicopter for public transportation in the post-war years.

The Institute of Aeronautical Sciences, which is presenting the award, has also elected Mr. Sikorsky an honorary fellow of the organization.

Science News Letter, January 2, 1943

NUTRITION

Meat Rationing Calls For Thrifty Purchasing

➤ WHEN MEAT rationing goes into effect, housewives must remember to be as thrifty with their ration stamp points as they were with their pennies during depression days, in order to get the most nourishment from their purchases.

Lean beef, lamb and veal have about the same nourishing value, although their point value may vary according to the national supply of each. So if roast beef takes more points than roast lamb, it is thriftier to buy the lamb, just as it would be thriftier to buy the lamb if its money cost were less.

Pork is somewhat of an exception. Lean pork has more of the vitamin B complex than other lean meats. Offsetting this advantage somewhat is the fact that pork requires long cooking which destroys some of these vitamins. Just how much vitamin value is lost in the cooking of pork has not been definitely

established. Until it is established, the housewife can probably rely on point and penny thrift in selecting between pork, beef, veal and lamb, without worrying over the vitamin values.

Differences in cuts of meats should also be considered in purchasing with points, just as thrifty housewives have always considered the financial side of these differences. The rule here is that cheaper cuts, in money, are just as nourishing as more expensive ones, and this will probably also apply to cuts that are cheaper in points.

Most important to remember is that the unrationed meats, called variety meats or organ meats, have the highest all round nourishing value. Liver, kidneys, heart, sweetbreads and brains are included in this group.

Science News Letter, January 2, 1943

CHEMISTRY

TNT Used in Making Light-Sensitive Paper

➤ TNT CAN be used to shoot photographs as well as in blowups with high explosive bombs. The odd fact that TNT can be used as a light-sensitive coating for paper is reported by Dr. Walter O. Snelling, director of research for Trojan Powder Company, in the *PBOW News*, a publication issued at the Plum Brook Ordnance Works.

Dr. Snelling made the first photograph produced with TNT instead of the usual silver salts — a beautiful sepia-appearing portrait of Major Lewis K. Kallmyer, commanding officer.

It is not expected by Dr. Snelling, however, that TNT will be commonly used in photography. Importance of the experiment is in the information it provides about the handling and storing of the explosive.

That TNT could be used as a light-sensitive substance, was discovered by Dr. Snelling incidentally as he was studying the effect of light in darkening TNT. He found that when light acts on the TNT, it produces, in addition to the previously known reddish brown decomposition product, a volatile pink reaction product, the composition of which is unknown. This goes completely through filter paper and can be deposited on an underlying sheet of paper.

Dr. Snelling was successful in coating a suitable paper with a layer of TNT left by the evaporation of a solvent and used this as a photographic printing paper to produce the "sepia" portrait.

Science News Letter, January 2, 1943

METALLURGY

Color Changes Detect Traces of Metals

➤ COLOR CHANGES in the test tube will enable chemists to measure amounts of the silver-white metal, palladium, in solutions as dilute as 1 in 300,000,000 parts. The method was developed by Dr. John H. Yoe and co-workers at the University of Virginia.

This is the first procedure to be discovered which will detect such minute traces of the metal. It will be useful in analyzing and studying the platinum group of metals and their alloys. Palladium is used in dentistry, jewelry and to speed certain chemical reactions.

A new color method for detecting traces of iron as small as one part in 75,000,000 was also discovered, Dr. Yoe reports.

Analysis by weighing, rather than a color change, is the final step in a procedure developed at the University of Virginia to test tungsten ores and steels, an important metal in war production.

These investigations were part of a research program being conducted by Dr. Yoe and his associates to discover new and more sensitive organic analytical solutions for detecting and determining amounts of chemical elements and their compounds. Such studies have important applications not only in chemistry but also in medicine and biology.

Science News Letter, January 2, 1943

MILITARY SCIENCE

War Industries Protected Against Enemy Agents

➤ ENEMY agents have little chance to throw a monkey-wrench in America's war machinery as the government pushes its extensive program of plant protection, Lieut. Col. James C. Sawders, chief of the plant protection and safety branch of the Chemical Warfare Service, told the American Institute of Chemical Engineers.

Aliens are being hired in certain important war plants, but they must be investigated and approved by the Office of the Undersecretary of War, Col. Sawders explained. Most of them are found to be loyal citizens and trustworthy.

Infiltration of spies is avoided at all costs. Vital plant facilities are closely guarded and special attention is given to fire prevention, fencing and protective lighting, investigation of employees and protection of confidential documents, blueprints and special tools.

Science News Letter, January 2, 1943