FORESTRY

Millions of Board Feet Of Lumber Lost Each Year

➤ MILLIONS OF board feet of timber are lost each year to insects, disease and fire, Lyle F. Watts, chief of the U. S. Department of Agriculture's Forest Service, has reported.

Some of the valuable wood could be saved by quick counter-attacks. More research on insects and disease and a well-organized system of spotting infestations would aid in the battle against losses, Mr. Watts states in his annual report.

The most serious forest pests can be controlled and new pests can be prevented from entering the country, he believes. Bark beetles, particularly the Engelmann spruce beetle, are among the most destructive forest insects. An amount of national forest timber equal to the lumber required for 400,000 five-room houses has been destroyed in Colorado during the past 10 years by this spruce beetle. Totaling more than 4 billion board feet, this is 16 times more timber than was killed by fire in the past 30 years in the entire Rocky Mountain region.

In 1951, national forests returned to the U. S. Treasury $1,194,000 more than the total cost of their protection and management, Mr. Watts stated, and during the year, the highest cut in the history of the Forest Service was made from them.

More than half of the commercial forest land is still being handled poorly or destructively, he reports. On only one-fourth of the commercial forest lands, mostly public and large industrial holdings, is management good. On the other fourth, management is fair.

Science News Letter, January 26, 1952

PHYSICS

How to Remove Odors From Home Freezer

➤ IF YOU have a home freezer or are thinking of getting one, you may sometime find yourself with the problem of an unpleasant odor resulting from food spoiling because of a power cut-off. Fortunately, this does not happen often.

Just because it is a rare occurrence, you may want to cut out and keep these suggestions for removing odors from the freezer. They come from Dr. Earl McCracken, physicist in household equipment laboratories of the U. S. Bureau of Human Nutrition and Home Economics:

First try washing all the interior surfaces of the freezer with plenty of soap and water. Then go over them with a cloth wrung from clear water. Wipe dry. If this does not dispel the odor, wash the freezer with soda water, using 1 teaspoon baking soda to each quart of warm water. If the odor persists, try vinegar, using about one cup to a gallon of water, or household ammonia in the same proportions.

But if none of these suggestions prove effective, don't give up. Try using heat to bring out the odor particles and get them into the air. To do this put something like a toaster or electric heater inside the freezer to heat it up. Then use an electric fan a couple of hours to blow the air out.

Activated charcoal, put into the warm freezer will absorb odors released by the heat. Or a commercial, wick-type air freshener may be put into the warm freezer for the same purpose.

If only traces of the smell remain, this is not likely to affect food frozen and stored in the freezer if care is taken to wrap the food securely. When a package is taken out remove the wrappings as soon as possible and dispose of them at once.

When the odor has been removed or reduced to where it is of no consequence, Dr. McCracken suggests a final washing of the inside surfaces of the freezer with soda water. Activated charcoal left in for a while will pick up any residual odor.

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TECHNOLOGY

Concrete Wall Panel Has Center Fiber Glass Layer

➤ CONCRETE SLABS with center layers of glass fiber, already in experimental use, are designed to lessen the cost of masonry construction and provide an insulating sandwich wall for commercial, industrial and residential use.

The slabs are factory-made. They are shipped to the job after a 12-day curing period ready for installation. They are five inches in thickness and are made in sizes from eight-by-eight feet to eight-by-30 feet. Edges of the standard panels are tongue and groove on all four sides to produce an interlocking joint. One side has a facing of muslin cloth, the other a rough broom finish.

The slabs are cast in a flat position with the muslin on the bottom form plate. A concrete mixture and wire mesh are placed on this. Over it is put a layer of pre-formed glass fiber and another layer of concrete. After setting the slabs are cured for two days in a chamber at 120-degree temperature and 100% humidity. Then they are cured in the factory yard for ten days.

These slabs can be used as a curtain wall to be attached to structural iron or as a load-bearing wall. Owens-Corning Fiberglas Corporation, Toledo, Ohio, whose product is used for the center layer, states this new sandwich wall is meeting with great favor among builders because of the speed with which it can be erected. It saves up to 40% in masonry cost, it is claimed, and is highly durable because of less joints.

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IN SCIEN

AGRICULTURE

Weed-Killer Makes Possible Apricots as Big as Peaches

➤ APRICOTS THE size of peaches may be on the market within the next few years.

A research program being conducted on deciduous fruits by Julian C. Crane and Reid M. Brooks at the University of California at Davis is more than bearing fruit.

The two California scientists have found that a weed-killer solution, when sprayed on apricot trees, not only hastens the ripening of the fruit by 18 days but increases their size considerably.

The solution, sold commercially as 2,4,5-T, was sprayed on Royal apricot trees during the time of thinning operations. The hormone application stimulated the flesh of the fruit to grow but did not increase pit size. The flesh was 21% thicker than that of unsprayed fruits.

This same spray has been known to hasten the maturity of figs, apples and peaches, but this is the first time it has increased the size of a fruit.

Since slight injury occurred on the tips of the young branches when the potent hormone weed-killer was sprayed on the apricot trees, further experimentation is necessary before commercial recommendations will be made.

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ICHTHYOLOGY

Counter Current Makes Fish Gills Efficient

➤ FISH UTILIZE oxygen to a high degree because in the gills the water, containing the oxygen, and the blood flow in opposite directions. Experiments reported in the journal NATURE (Jan. 5) confirm this theory of how fish use oxygen.

Drs. E. H. Hazelhoff and H. H. Evenhuis of the Zoological Laboratory at the University of Groningen in The Netherlands tested the theory by pumping water through tubing into the mouths of fish. The gills on one side of the fish were put out of action so that the exact volume and direction of water passing the other set of gills was known.

When the direction of the current was opposite to that of the blood the average oxygen utilization was about 51%; but when the water current was in the same direction as the blood, they found the average oxygen utilization was only about 9%. This "counter current principle is of high importance for the efficiency of the fish gill, and no doubt for that of other gills as well," they state.

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CE FIELDS

AGRICULTURE

Orange Trees Grow 14 Years In Water and Sand Cultures

➤ WHATEVER THE opinions of organic gardeners and angle worm fanciers, plants and even good-sized trees will grow indefinitely in water cultures and produce high quality fruit, scientists at the University of California's Citrus Experiment Station in Riverside have established.

Organic matter has great value in preserving soil structure, in preventing leaching losses of soil nutrients, and in providing some insurance against nutritional deficiency in the soil. Dr. H. D. Chapman, chairman of the division of soils and plant nutrition, explains that organic matter is not indispensable.

"From our experience in water and sand cultures," he said, "we know that most green plants can be grown in a medium devoid of organic matter. For example, we have 14-year-old orange trees which have been growing continuously in water cultures during their entire life.

"These trees continue to produce good crops of fruit, are green and healthy, and the quality of the orange produced, as far as can be measured, is as good as the quality of oranges grown in soils."

Because plants are constantly extracting nutrients from the soil, restoring organic matter to the soil does to some extent replace the plant nutrients taken away.

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NUTRITION

Super-Good Growing Diet May Worsen Chronic Ills

➤ A HINT that a super-good diet for making children grow big and strong may boomerang and make worse some of the chronic diseases of middle and old age appears in a report from the U. S. Bureau of Human Nutrition and Home Economics.

"Combinations of food that seem to provide adequately for growth may tend to accentuate certain chronic ailments commonly associated with age," is the official wording of the report summing up research by three of the Bureau's scientists.

The research was made on rats, classic animals for nutrition studies. The rats ate rations cooked as for human consumption. The diets included such foods as round steak and pork loin, carrots, potatoes, kale, eggs, navy beans, milk, corn meal, rice, enriched bread and hydrogenated fat (Crisco).

In general, the scientists report, the diets that promoted the largest early weight gains and the heaviest adult animals also tended to promote fatness, more body sores at an earlier age and more bronchiectasis. This lung disease is considered like hardening of the arteries in man, in that both are chronic, progressive diseases which limit the life span. Body sores are usually considered a sign of senility in rats.

The rat's response to diet may not be identical with that of man, the scientists warn. A good diet for making children grow may not have any repercussions later in life. But the research does point up the fact that the over-all nourishing value of human type diets for human beings cannot be judged by the effects of the diets on rats without careful evaluation of the findings.

By keeping this in mind, however, it is believed that by feeding selected diets to rats over their entire lifespan through several successive generations, much can be learned about the influence of entire diet patterns on growth, reproduction and aging.

The scientists whose work is summarized in the annual report of the Bureau are Drs. Elizabeth Crofts Callison, Elsa Orent-Keiles and Rachel Uhvits Makower.

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NUTRITION

Upside Down for Your Vitamins and Vegetables

➤ IF YOU and your family, however vitamin conscious, have grown tired of vegetables, you might try a variation of the always popular upside down cake, making it with vegetables and calling it upside down vegetable squares. The recipe comes from Elizabeth Ellis, home economist of the University of New Hampshire at Durham:

- 2 cups sifted all-purpose flour
- 3 teaspoons baking powder
- ½ teaspoon salt
- ¼ cup shortening
- 1 cup milk
- 1 egg, well beaten
- 4 cups cooked vegetables (carrots, peas, celery, lima beans)
- ¼ cup vegetable water
- 2 tablespoons butter
- mushroom sauce

Sift together dry ingredients; cut in shortening. Combine egg and milk; add to dry ingredients, stirring until mixed. Arrange hot seasoned vegetables in bottom of greased shallow baking pan, add vegetable stock, dot with butter, and cover with dough. Bake in hot oven (425 degrees Fahrenheit) 20 to 25 minutes. Turn out on hot serving plate with vegetables on top and serve with mushroom sauce. Six servings.

For the mushroom sauce, Miss Ellis says to saute one dozen medium sized mushrooms in two tablespoons table fat, add two tablespoons flour. Gradually stir in one cup milk, and stir till mixture thickens. Cook about three minutes longer; add ½ teaspoon salt, ⅛ teaspoon pepper, and a few drops Worcestershire sauce. Diluted mushroom soup can substitute for mushroom sauce.

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METEOROLOGY

Atomic "Base Surge" Is Not Limited to Tropics

➤ THE "BASE SURGE" of thousands of tons of tiny radioactive water droplets mixed with air can happen in any climate. Therefore it is not safe, as was recently contended, to say that New York is forever free from the effects of an atomic base surge.

This opinion, in opposition to another opinion that base surges such as happened at Bikini in 1946 would not occur in a temperate climate, was expressed by Navy Capt. Howard B. Hutchinson in a letter sent to the BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY for publication in a forthcoming issue. The more reassuring opinion, that New York and other temperate cities would be relatively safe from a rain of radioactive water, after an underwater A-bomb explosion, was expressed last fall by Air Force Col. B. G. Holzman. Both officers are meteorologists.

Col. Holzman contended that the original base surge, the water spewed up from the ocean in the form of an aerosol by the underwater blast of the A-bomb, was greatly enlarged at Bikini by the large amount of moisture in the warm, tropical air. Thus the danger of deadly radioactive rain with which the ships were covered was multiplied.

Capt. Hutchinson, on the other hand, points to two base surges which he said occurred in temperate climates, one at sea and the other on land. The first was after the explosion of an ammunition ship, the "John Burke;" the second occurred when 160 tons of TNT was exploded at Dugway, Utah, last spring. Neither the climate, Capt. Hutchinson said, nor the depth of the water or even the absence of water, had anything to do with the formation of base surges in these cases.

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INVENTION

Bed Lengtheners Give Comfort to Tall Man

➤ THE OVERLY tall man can now have a bed of comfortable length wherever he may be. All he needs to do is carry with him on his travels a pair of bed-lengtheners to install as extensions on the side rails of the bed.

This bed-lengthener is an adjustable device which can be extended or shortened. All one has to do is disconnect the rails where they are attached to the foot-board. Then the extender is hooked into the slots on the foot-board and the hooks on the side rail fixed into slots on its other end.

Inventor is Glenn Hill of Los Angeles. Patent 2,582,035 was his award. Rights are assigned to Irvin A. Brock of Los Angeles.

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