ENTOMOLOGY

Yearly Food Bill of Insects Could Build Whole New Fleet

MORE THAN nine hundred million dollars—enough to replace every battleship in the U. S. Navy with a brand new $40,000,000 dreadnought and have quite a lot left over for cruisers—is the annual food bill of the major insect pests of the United States.

This staggering sum has been totaled by J. A. Hyslop of the Bureau of Entomology, U. S. Department of Agriculture, out of estimates of damage done by 34 of the more important of the many-legged enemies of man's crops, forests and manufactured products. This estimate covers only a small number of species, though it does include the most harmful ones. But there are now about 6,000 species of insects on record as of economic importance, though many of them do little damage.

The biggest single item in the damage done by insects is charged up to the cotton boll weevil. Its dinner check comes to $164,500,000, nearly enough in one year to pay for all the "treaty cruisers" that Uncle Sam expects to build. The cotton boll worm is another terrific offender, scoring second with a damage of $104,000,000 per year. This is not all wreaked on cotton, however, for under the alias of corn ear worm the same insect raids our most important cereal crop, and it also throws tobacco and tomatoes for a loss.

None of the other insect species does damage running up to nine figures, though there are eighteen of them that get into the eight-figure class, ranging from the spruce budworm at $71,400,000 down to the clothes moth, whose larvae defy all the ill smells that man can marshall against them, to the tune of $10,800,000.

Our vanishing forests, yearly scored by devastating fires, have the invisible fires of hungry insect appetites constantly raging against them. Including the damage done by spruce budworms, insects attacking forest products, bark-beetles and miscellaneous leaf-eating pests, the total losses to forests and forest products amount yearly to $138,300,000. This figure, however, does not include termite damage which is wrought principally on standing buildings or piled lumber. The termites, or "white ants," account for $29,290,000 worth of ruin every year.

What insects do to corn, wheat, oats and other grains in storage is estimated only in the most general way. A round figure of $50,000,000 a year is given. The same figure is set for the losses due to grasshoppers, locusts, crickets and their kin, making a total of a hundred-million-dollar tax on the national bakers' bill collected by the principal enemies of grain.

Science News Letter, May 23, 1931

BOTANY

Redwood Heart-Rot Caused by New Fungus

REDWOOD lumber can be largely saved from the destructive fungus that causes brown heart-rot by the simple expedient of rolling the sections of a trunk apart after it has been sawed into short logs. This fungus gets its start in dim, damp cracks like those left by a crosscut saw, Prof. Emanuel Fritz of the University of California has discovered.

Although the disease has been known for a long time, and has been traced to a fungus, the causal organism could not be identified because its fruiting bodies had never been found. Prof. Fritz discovered these in saw kerfs between logs, in rift cracks in lumber, and in the hollow butts of trees.

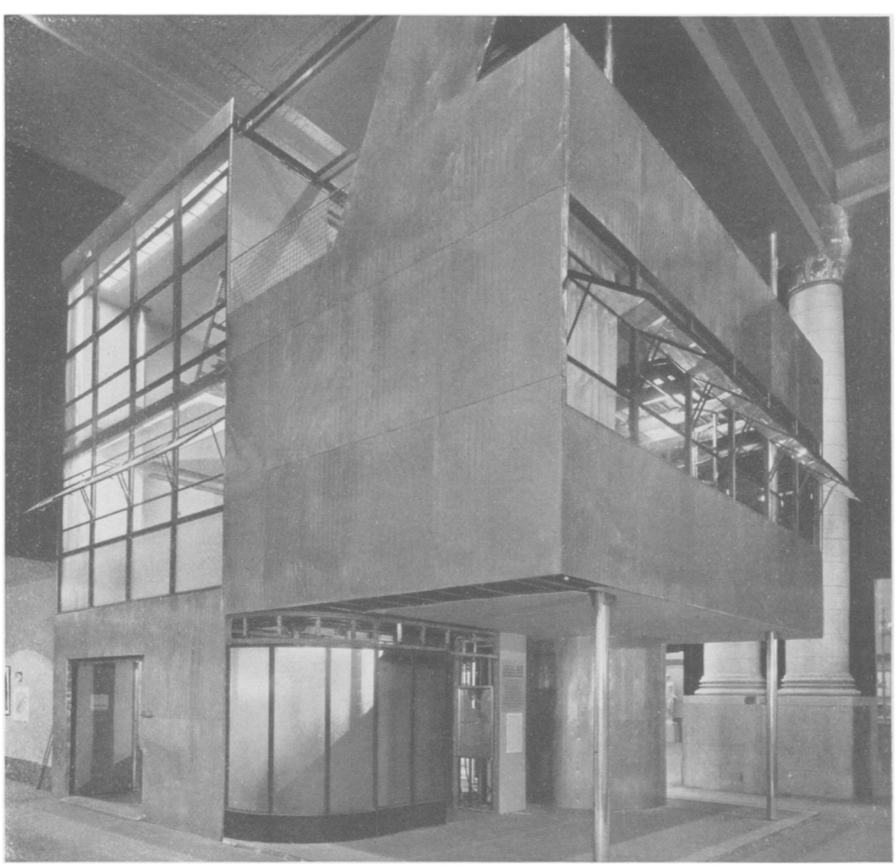
Science News Letter, May 23, 1931

ARCHITECTURE

Architects Examine Thoroughly Modern Home

A TYPE of home that makes full use of the latest modern inventions is pictured below as it was shown at the biennial Architectural and Allied Arts Exposition in New York. (SNL Apr. 25, '31). Its walls are open in places to reveal the interior construction.

In spite of its bare, metallistic appearance, the house is designed to be convenient, comfortable and healthful. The construction is mainly of glass, alumi-



A FUTURE HOME LAID BARE BEFORE ARCHITECTS

num and steel, insulated so that a three-inch wall is more effective than 14 inches of masonry in excluding heat and cold. Instead of the usual supporting walls of brick there are six slender columns of aluminum upholding cantilever beams from which outside walls are suspended.

Special glass is used to permit the penetration of beneficial ultraviolet rays of sunshine.

Science News Letter, May 23, 1931

CHEMISTRY

Mineral Oil Preserves Eggs on Large Scale

MINERAL oil seals and preserves between 1,500 and 2,250 dozen eggs an hour in a new electrically driven machine for processing eggs. The eggs remain good for more than a year.

After the eggs are properly candled, graded and cleaned they are put on an endless, moving belt in groups of three dozen and carried through a hot bath of mineral oil which hermetically seals the shells, the Electric Journal explains. It is said that no other chemical or physical change occurs and that weight, color and appearance remain the same.

Science News Letter, May 23, 1931

ARCHAEOLOGY

Explorer Finds First Traces of Unknown Everglades Tribe

Square Mile of Earthworks Near Lake Okechobee Are Largest Known Remains Left by Moundbuilders in America

FIRST TRACES of the unknown prehistoric Indians who lived in the Everglades have been discovered by Matthew W. Stirling, chief of the Bureau of American Ethnology. Mr. Stirling has returned from several months of archaeological exploration in Florida.

On the very edge of the Everglades, near Lake Okechobee, Mr. Stirling encountered a great plan of earthworks, elaborately laid out in embankments and mounds, and covering an area a mile square. So large and conspicuous are these earthworks, Mr. Stirling said, that it is surprising that no previous explorer has ever reported their existence or their significance. The nearest approach to anything like them are the famous Fort Ancient earthworks in Ohio, which were also made by prehistoric moundbuilding Indian tribes.

The most prominent feature of the Everglades site is a flat-topped rectangle of earth built 30 feet high and 250 feet long. This was apparently the focussing point of attention for whatever ceremonies were held at the site. Earthen embankments enclose a court in front of this high place. Back of it a semi-circular bank of earth was raised.

This is only a small portion of the earthworks. A curious formation consisting of a large semi-circular bank extends in front of the high place and its court. And out from the semi-circle start a number of parallel lines of banks with circular mounds at the ends. Within the great semi-circle is a platform of earth six feet high and a quarter of a mile long.

"The whole plan is laid out with remarkable precision," Mr. Stirling reported. "The parallel lines are straight as a string, and the semi-circles are so perfect that we can imagine some Indian walking around a fixed point with a string held taut, to mark the outline."

Excavations into this important site will be made next season, Mr. Stirling said. In his exploration visit, he found potsherds on the edge of the site, showing that the inhabitants of the place were familiar with pottery. These Indians inhabited the Glades before the seminoles came there from farther north in comparatively late times.

Excavation of a large burial mound made of sand was another achievement of the expedition. This mound, south of Key Marco, contained 250 burials of Calusa Indians, together with their possessions. The Stone Age of prehistoric America was almost the Shell Age in this region, for the Indians had shell hoes and axes, shell cups and ornaments. Stone was scarce, though a few stone implements were brought in by traders from farther north.

It is Mr. Stirling's view that this mound was the burial place of the Indians who left the "biggest shell heap in the United States" famous in Florida.

Science News Letter, May 23, 1931

PSYCHOLOGY

Toy Highway Tests New Drivers Without Dangers of Road

WITH THE AID of a miniature car on a "toy" highway, Dr. A. R. Lauer, psychologist at Iowa State College, Ames, has developed a means for measuring driving ability without endangering the safety of other drivers on the road. Dr. Lauer is a member of the National Safety Council, and is conducting research for the committee on the psychology of the highway of the National Research Council.

The small car is operated by remote control with the standard driving equipment of the ordinary automobile, the person tested being seated in a regular driver's seat. The "road" is placed in front of the hood of the life-size car, and the driver must guide the small car over its whole length, around curves, past railroad crossings, and through other difficulties familiar to the motorist. Each time the car leaves the road or the driver fails to observe his instructions as to speed limit, slowing up for intersections, and so on, an electric recording apparatus automatically records an error.

The test in the laboratory is supplemented by one in a standard car out on a special test highway.

Dr. Lauer is also making a study of how signal lights and other safety devices can be changed to make the road safe for color-blind drivers, for the committee has found that safety would be increased by assuming that some drivers are color-blind all the time, and that all drivers are color-blind some of the time, under certain conditions. He is giving tests to determine what types of lettering and what color combinations make license plates most easily read and remembered. And he is making an effort to find out what training may be given motorists to increase the safety of the highway.

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