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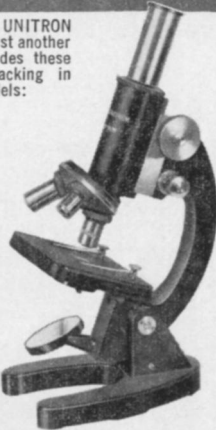
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INVENTION

Patents of the Week

► A MAN-MADE CHEMICAL that attracts male gypsy moths by duplicating the natural attractant of female gypsy moths has been patented as No. 3,018,219.

Dr. Martin Jacobson of Silver Spring, Md., assigned patent rights to the U. S. Government as represented by the Secretary of Agriculture. The chemical can be used to detect gypsy moth infestations, as well as to control the insects.

The gypsy moth does serious damage to forest and shade trees in New England and eastern New York State. The caterpillars, or larvae, of gypsy moths eat the leaves of trees, often causing death by a single attack. Losses of hardwood trees have been estimated at tens of millions of dollars from a 20-year study.

Gypsy moths were prevented from spreading to other U. S. forest areas by using the natural attractant of the female to detect infestations, then spraying with chemicals such as DDT to kill the insects.

Since the lure could previously be obtained only by clipping the last two abdominal segments of the virgin female moth, extracting the segments with benzene and then processing to stabilize the chemical, the procedure was expensive. Another difficulty was that, as the gypsy moth population declined, it became increasingly hard to obtain the females needed for lure production.

Dr. Jacobson overcame both these difficulties by discovering a synthetic method for making the female's attractant chemical. The chemical is known as 12-acetoxy-1-hydroxy-cis-9-octadecene. It is so potent that the fraction of a drop produced by the female is 200,000 times more than the amount needed to catch a mate. The synthetic chemical is also very powerful—it works in amounts about equivalent to one drop in a box car.

The flightless female gypsy moth mates only once a year and, as soon as she does, an enzyme switches off production of the sex attractant. The winged male, however, can mate several times and it is because of this that the chemical is being used for pest control.

By using a mixture of attractant and DDT in traps lined with a sticky substance, enough males can be caught to reduce the gypsy moth population substantially.

Walter Haeussermann of Huntsville, Ala., received a patent for a mechanism to control the attitude of space vehicles in orbit. He assigned patent No. 3,017,777 to the Government through the Secretary of the Army.

The mechanism, which uses air bearings and magnetic support for the rotor, is designed to stabilize vehicles weighing more than a ton. It is constructed so that each of the three axes—pitch, roll or yaw—can be controlled separately.

Parakeet, canary and other bird owners who want to feed their birds live greens can take advantage of the device patented

by Leonard Stern of New York, who assigned rights to patent No. 3,017,859 to Hartz Mountain Products Corporation.

The greens feeder consists of two containers, the outside one being for water and the inside one for soil, so placed in the cage that the growing greens are readily available to the bird.

Many snow-weary residents of most of the United States west of the Appalachian Mountains are already using a device that won Albert R. Racicot of Aurora, Ill., patent No. 3,017,649. He assigned rights for a "multi-part collapsible snow and ice removing device" to the National Brush Co., also of Aurora.

The long-handled snow remover can be disassembled when not in use for easy storage. A brush handle can be attached at one end, and a scraper and a squeegee at the other.

A bowling pin with improved means of withstanding stress won patent No. 3,018,106 for Fred E. Satchell and Louis J. Trier of Muskegon, Mich., who assigned rights to the Brunswick Corporation.

To prevent a wooden bowling pin from splitting, they devised a method of coating it with a resilient layer, a cover material to form a separating film over the first layer, and a second thin layer of covering material. The intermediate layer prevents stresses from being transmitted, the inventors claim.

Tire buyers as well as sellers can benefit from patent No. 3,017,989, granted to Jack S. Swenson of St. Paul, Minn., for his pressure-sensitive adhesive tape. He assigned rights to Minnesota Mining and Manufacturing Co.

Previously available pressure-sensitive adhesive tapes, he claims, have become badly wrinkled when wrapped around tires exposed to the elements, but tape products of his invention remain smoothly bonded in place on the rubber tire under similar circumstances.

• Science News Letter, 81:94 February 10, 1962

Questions

NATURAL RESOURCES—How many percent of Americans engage in some form of outdoor recreation? p. 83.

PHYSICS—How many neutrinos bombard each square inch of the earth each second? p. 84.

SPACE—How many percent failure needing the use of the emergency recovery system on manned space flights are expected? p. 86.

Photographs: Cover, U. S. Air Force; p. 82, Bell Telephone Laboratories; p. 83, Sperry Gyroscope Company; p. 85, Geophysics Corporation of America; p. 87, U. S. Coast Guard; p. 90, The Martin Company; p. 96, Eastman Chemical Products, Inc.