

ENTOMOLOGY

No Stopping Jap Beetle

Control measures have held back spread of the voracious Japanese beetle, but will not halt it. Turning inspection and quarantine duties over to states is being considered.

► THE JAPANESE beetle may have us licked.

The voracious beetle will spread wherever it wants to go, regardless of the counter-measures we take, Avery S. Hoyt, chief of the U. S. Bureau of Entomology and Plant Quarantine, told SCIENCE SERVICE.

Control measures carried on by the Federal government with the cooperation of state and local authorities have held back the march of the Japanese beetle, he said, but cannot be expected to eradicate it. The main job of Japanese beetle control has been to give the American farmer time to learn to live with the pest.

If Secretary of Agriculture Benson's budget cut-backs are accepted by Congress, Federal inspection of materials suspected of harboring Japanese beetles or their grubs will be abruptly ended. This will mean a saving of \$332,700 in the department's budget; but the individual states will be expected to assume the job of inspection and certification of disinfested goods.

However, this move to turn the beetle control over to the states has been under consideration for a long time, Mr. Hoyt said. Discussions towards uniform quarantine laws for the individual states have been going on for over two years.

Quarantine measures are based on suppressing beetle spread in individual shipments of possibly contaminated goods. The "certificate of inspection" is more accurately a certificate that insecticides have been applied to the suspected materials. This is a job that state authorities can now take over cheaply and effectively.

The real battle against the Japanese beetle is carried on already at the state and local levels, where insecticides, traps and the beetle's natural enemies are used to decimate its numbers in a given area. Quarantine is a "policy of containment," aimed at slowing down the beetle's infiltration into uninfested states.

Federal quarantine has been in effect against the Japanese beetle since 1919, when the pest was restricted to New Jersey alone, where it was first discovered three years before. Since that time, in spite of control measures, it has radiated outward about five to ten miles each year, until now it is found over an area of about 40,000 square miles. This has been largely a natural spread, though, indicating that quarantine has been effective in preventing the beetle's distribution across the nation in interstate commerce.

The Japanese beetle, *Popillia japonica*, emerges from the soil during the hot summer months to plague farmers and garden-

ers with its insatiable appetite. It finds the leaves and soft parts of nearly 275 kinds of trees, shrubs and other plants very acceptable entrees. The adult is a shiny brown and green with 12 white spots. When still a worm-like grub in the ground, the young beetle chews away at lawn grass roots and roots of other plants.

The Japanese beetle's dinner bill, paid by the nation, is some \$10,000,000 a year.

Science News Letter, April 25, 1953

TECHNOLOGY

Mirrors, Periscopes Show "Hot" Plutonium

► MIRRORS REFLECT the image of radioactive plutonium, but they do not reflect the dangerous radiation given off by the substance.

For this reason, mirrors and periscopes are used at the Atomic Energy Commission's plutonium plant, Richland, Wash., to help workers see around protective barriers. Special glass windows and water-filled tanks also are helping the scientists get a safe picture of a dangerous substance.

Periscopes are more widely used than mirrors. The 'scopes can be equipped with photographic lenses that allow good pictures to be taken. Mirrors often distort distances, making seeing difficult for scientists who are watching.

Some of the periscopes have turrets of lenses that provide scientists with different degrees of magnification. Others can be fixed to see around corners, inside pipes and up stair wells. Some of the periscopes also have synchronized searchlights to illuminate the subject.

Scientists sometimes must "handle" radioactive materials in water tanks. The water is an effective filtering agent against deadly radiation. The radioactive material is easily seen on the bottom of the tank because of the high refractive index of water. This makes the bottom seem closer than it actually is.

But if the water is turbulent, a glass-bottomed wooden box floating in the tank will provide a clear view, state the General Electric scientists who are running the plant for the AEC.

Foot-thick glass windows also are used to protect personnel. Made of layers of plate glass, the windows afford about the same protection as the same thickness of concrete. A new type of glass containing large amounts of lead oxide offers more protection than the same thickness of steel.

Science News Letter, April 25, 1953

• RADIO

Saturday, May 2, 1953, 3:15-3:30 p.m., EDT
"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Finalists from some of the local Science Fairs will be interviewed in anticipation of their visit to the Fourth National Science Fair at Oak Ridge, Tenn., May 7-9.

INVENTION

Rotary Bomb Bay Door Eliminates Hazard

► A ROTARY bomb bay door has been invented that actively ejects bombs from today's fast-flying airplanes.

The bomb bay door rotates around its center axis so that when the bomb bay is "open," the airplane is still closed.

Inventors Albert T. Woollens of Baldwin, and Werner Buchal of Bel Air, Md., report that bomb bays of World War II vintage are not satisfactory on today's faster bombers. When the old-style doors snap open, so much air turbulence is created around the bomb bay that released bombs actually tumble around in the bomb bay for a while instead of falling out.

This is "obviously a dangerous situation," they state. The open doors also produce so much drag on the bomber that the big plane slows down during the critical bombing run. This makes it difficult to bomb targets accurately.

The new door carries bombs shackled to its "inside" face. Each shackled bomb rests against ejection pistons which try to push the bomb away from the door.

When the bombing run is to be made, the door is revolved so that the bombs are on the outside of the plane. When the shackles are released, the ejection pistons thrust the bombs away from the plane so the bombs neither hit the plane nor collide with each other.

Adaptable to carry ground-strafting rockets, the bomb bay door is detachable from the plane and can be loaded on the ground. Then it is hoisted into position in the plane.

The inventors assigned their patent, No. 2,634,656, to the Glenn L. Martin Company, Middle River, Md.

Science News Letter, April 25, 1953

NEW READY REFERENCE SELECTOR CHART



shows at a glance the pH points where 20 Hydriion Test Papers give 97 positive color changes. Facilitates selection of appropriate Test Paper for each application.

Just ask for free "SNL Selector Chart"
R. P. CARGILLE LABORATORIES, Inc.
117 Liberty Street, New York 6, N. Y.