

nance and industrial concerns have transmuted into metal. Whether or not guided missiles take up the task in future of delivering atomic bombs for ground troop

support in any weather, the 280 mm gun is in production and is the newest and latest artillery weapon the world has seen.

Science News Letter, October 25, 1952

## AERONAUTICS

## Hail as Flying Hazard

➤ HAIL AS a hazard in flying has become a matter of alarm to airline companies now that routine operational flights are made during bad weather. Even brief encounters with hard hail can cause major structural damage to a plane.

The leading edges of the wing and the tail are the most susceptible to damage by hailstones, according to a report of the National Advisory Committee for Aeronautics. Damage to the fuselage is usually confined to the nose and cockpit sections.

Windshields and canopies are sometimes broken or cracked. Engine cowlings are damaged to about the same extent as leading wing edges. Ignition harness and cooling fins are sometimes injured enough to require replacement. Engine air-intakes may be blocked by the hail.

Hail is usually encountered by airplanes in thunderstorms. The best way to avoid it is to keep out of thunderstorm areas. This is not always possible, however; hail may be encountered outside but near a thunderstorm. Where such cases are reported, it is presumed the hail was blown out of the thundercloud.

Many military and some commercial

planes are now equipped with radar which can be used to detect areas of precipitation. This equipment, however, gives no indication of the type or intensity of precipitation. It gives no warning of hail within the precipitation area. But it does give warning that permits a pilot to change his route and circle the storm center.

Military and civilian air-transport operators are now interested in air-borne radar which will enable a pilot to avoid the dangerous areas within thunderstorms and squall lines, and to fly through precipitation clouds with safety and comfort.

The report was prepared by Robert K. Souter and Joseph B. Emerson of the NACA laboratory at Langley Field, Va. It includes a summary of damages to planes by hail as reported by the U. S. Air Force, civil airline companies and the Civil Aeronautics Administration. The report, "Summary of Available Hail Literature and the Effect of Hail on Aircraft in Flight," summarizes experimental work by the CAA in bombarding stationary planes with pellets of ice the size of hailstones.

Science News Letter, October 25, 1952

## VETERINARY MEDICINE

## Medical Whodunnit Solved

➤ SOLUTION TO a medical whodunnit story, the mystery of the seven sick race horses, has just been reported to the Army Medical Service Graduate School in Washington. The solution brought the discovery that Japanese encephalitis, a brain inflammation, exists in Malaya, where it had never before been even suspected.

Unfortunately, an English nurse also got sick and died before the mystery was solved.

Scene of the mystery was Malaya. The horses got sick in the summer of last year, dismaying their backers by suddenly going off their feed, developing circling gaits, fever and weakness of various degrees. British government veterinarians in Singapore were even more dismayed, because the symptoms suggested the brain disease, encephalitis, sometimes called sleeping sickness, which attacks both horses and humans.

While the veterinarians and U. S. Army medical researchers in Kuala Lumpur puzzled over the mystery of the sick horses, an English nurse in the British Military Hospital in Kinrara developed some of the same symptoms. In spite of all efforts to save her, she died within a few days. Tests that had been made on her, however, enabled the scientists to discover the killer, the virus

of the disease, of Japanese encephalitis.

The same virus had attacked the horses.

The reason that the presence of the virus in Malaya had not been discovered before is explained as follows: If a virus goes about its work quietly and steadily, without causing epidemics, it can easily go undetected among human and animal populations exposed to it from birth. In such endemic areas, it usually is not until foreigners arrive, adults with no immunity, that the virus gets into the limelight by suddenly causing one or more cases of serious sickness.

The medical and veterinary detectives who solved the mystery were: Capt. Philip Paterson, Maj. Herbert Ley, Jr., Maj. Charles Wiseman, Jr., Dr. William Pond, Dr. Joseph Smadel and Lt. Fred Diercks of the Army Medical Service Graduate School, Washington, D. C.; Dr. H. D. G. Hetherington and Dr. P. H. A. Sneath of the British Military Hospital at Kinrara; Dr. D. H. Witherington of the Municipal Veterinary Department of Singapore, and Dr. W. E. Lancaster of the Federation of Malaya Veterinary Service. Medical report of the whodunnit will appear in the *American Journal of Hygiene* (Nov.).

Science News Letter, October 25, 1952

## VETERINARY MEDICINE

## Tipsy Cows Get Jag From Apples

➤ IF THERE are apple trees in the pasture, Bossy the cow may eat so many apples that she gets "tipsy." But she will not get over her apple jag without prompt treatment, the American Veterinary Medical Association warns. In Bossy's case, the symptoms are due to a type of poisoning which may end fatally. Malic or hydrocyanic acid in the apples are believed to have something to do with the poisoning.

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