

MEDICINE

Atom Bomb Defense

Rutin may save future radiation victims by strengthening the walls of their blood vessels to prevent hemorrhages.

► A POTENTIAL medical weapon against the atom bomb has been discovered by Drs. Paul E. Rekers and John B. Field of the Atomic Energy Project at the University of Rochester.

Rutin, obtained as a bright yellow powder from the green buckwheat plant among other sources, is the weapon.

It might save future atom bomb victims who were not killed outright by strengthening the walls of their blood vessels.

Uncontrollable bleeding, with oozing of blood into practically every organ and tissue of the body, is a primary factor in the deaths of humans and other mammals exposed to sublethal and midlethal doses of total body irradiation.

Such hemorrhages killed a considerable number of persons within three to five weeks after the atom bombing of Hiroshima and Nagasaki. The hemorrhages were ascribed to lack of certain elements in the blood necessary for clotting. This was due to radiation damage to certain cells of the bone marrow. An increased quantity of heparin, anti-clotting chemical, or of heparin-like material, has recently been observed in dogs following acute whole body exposure to ionizing radiation such as that from the atom bomb.

Strengthening the blood vessel walls might, the Rochester scientists thought, protect the body of an animal or man whose blood had too little clotting power as a result of radiation damage.

Tests reported in the journal, *Science* (Jan. 2), seem to show that their theory is right. They gave rutin three times a day for a week to 25 normal adult dogs. The dogs were then given a mid-lethal dose of X-rays. They continued to get rutin throughout the test. Only three of the rutin-treated dogs died, whereas 16 of 25 untreated dogs died after the same X-ray dose.

Both groups of dogs had the same post-X-ray depression of blood elements, especially white blood cells and thrombocytes. The latter are involved in blood clotting. In several of the rutin-treated dogs, this decrease in white blood cells and thrombocytes was severe and lasted 10 to 14 days. But they eventually recov-

ered. Recovery from such severe and lasting depression of these blood elements, the scientists state, has rarely been seen in their laboratory.

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VETERINARY MEDICINE

Sleepy Sickness in Dogs Mistaken for Distemper

► A WARNING to dog owners to watch out for signs of so called sleeping sickness, or encephalitis, in their pets was issued by the American Veterinary Medical Association.

The disease may be responsible for a great many of the dog losses hereto-

fore attributed to distemper. It is caused by a virus that affects the brain and nervous system. Distemper is also caused by a virus, and the symptoms are similar. But treatment for the two diseases is different.

Anti-encephalitis serum is effective treatment in the early stages of the disease. Vaccination to prevent the disease is "still in the experimental stage," the association stated.

Encephalitis has been found in specimens from widely scattered sections of the country and is believed, on the basis of recent research, to be much more prevalent than heretofore realized.

More than 500 dogs in a single city, St. Cloud, Minn., have been stricken by the disease and a special veterinary research project has been set up to seek methods of controlling the outbreak.

An attack of encephalitis usually begins with violent convulsions followed by a lethargy in which the dog appears to be "walking in its sleep." Then these symptoms occur alternately. The death rate ranges from 20% to 75%.

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BIOLOGICAL ACTION OF ELEMENTS—Seeking ways to protect atomic workers from radioactive elements that might get into their bodies, Dr. Joseph G. Hamilton, University of California, injected the same elements into laboratory rats, then made these radioautographs of slices of rat bone, each one two-hundred-thousandth of an inch thick. They show the highly radioactive elements deposited in a thin layer of tissue, called the osteoid matrix, adjacent to the bone marrow cavity. Americium (lower), but not plutonium (upper) is also deposited in the region of small blood vessels that pass through the bone itself.