

MEDICINE

Thrombin Treatment Promises To Save Lives of "Bleeders"

Tried Out Under Extreme Conditions on Animals, Blood-Clotting Substance Stops Hemorrhages

A HIGH-SPEED blood-clotting substance that may prove life-saving to "bleeders" and to patients undergoing surgical operations is reported by Drs. W. H. Seegers, E. D. Warner, K. M. Brinkhous and H. P. Smith, of the State University of Iowa (*Science*, Jan. 27).

Sprayed from an atomizer onto a profusely bleeding wound in an animal's liver, the material checks the bleeding completely in five seconds or less. A small amount (one cubic centimeter) of the material in a one per cent. solution will clot an equal amount of blood within two seconds. Blood normally takes from two to five minutes to clot, and the rate is so much slower in hemophilia that these patients may bleed to death from small cuts.

What the speedy blood-clotting material will do for human patients who are bleeding dangerously remains to be seen after the scientists learn whether

the material is sufficiently germ-free to be safe for human use.

"Far more powerful" than any similar blood-clotting substance previously reported, this material is a gray-white powder obtained by special chemical treatment of blood and beef lung. This powder, which dissolves in water, is thrombin.

Thrombin and its role in blood-clotting has been known to scientists for some time. The gray-white powder which the Iowa scientists obtained, however, is a highly purified thrombin and is five times as powerful a blood-clotting agent as the most efficient thrombin previously reported.

This thrombin, the Iowa scientists report, is not poisonous when used to control the oozing of blood from the surfaces of tissues in surgical operations. When it is sprayed on such surfaces, a thin film of blood forms almost instantly and this seals the smaller blood vessels. The larger ones are kept from bleeding by being tied or clamped as a preliminary measure.

Bone and brain surgery should be especially helped by the new thrombin, it appears, if it proves applicable for human use. The prolonged bleeding from bone, often very troublesome to the surgeon during operations, can be checked by thrombin within five to ten seconds. The Iowa scientists report that

in animals they have been able, by using thrombin, to cut out portions of the brain and to check with ease the "hemorrhage which is otherwise so difficult to control."

Science News Letter, February 11, 1939

MEDICINE

Time Important Factor In X-Ray Treatments

BILLION-volt X-ray tubes for cancer treatment have a magic sound that has won the popular imagination. High voltages and other physical matters such as depth of penetration and wave-length are, however, relatively unimportant in cancer treatment when compared to the prosaic factor of time.

The importance of the time factor has been stressed by Dr. Francis Carter Wood, director of the Institute of Cancer Research at Columbia University.

The time factor in X-ray treatment means the rate at which dosage is applied, Dr. Wood explained. Its importance has long been recognized in the use of drugs. If you swallow a teaspoonful of acetic acid, Dr. Wood said to illustrate this point, it would probably cause a fatal burn. But you can take the same quantity in a French dressing over the course of a week without the slightest damage. The healthy tissues can resist a small amount of the acid but they cannot stand it in a concentrated form.

The same thing applies to X-rays. Giving large doses rapidly does much damage to healthy tissues, scientists now know. This big, rapid dose may damage the cancer tissue also, but what good is that, Dr. Wood asks, if healthy tissue is injured and ulcers or other trouble almost as serious as cancer arises.

NEW WILDLIFE STAMPS

The 1939 wildlife stamps, now going on sale, include a considerably larger variety of subjects than did the first series, issued last year. Two typical designs are those of a Chautauqua muskellunge, painted by Fred Everett, and of a cougar or mountain lion, by Morgan Stinemetz. The stamps are sold through the National Wildlife Federation and the proceeds used in promoting the study of wildlife problems and the conservation of native animal and plant species.

