

MEDICINE

Haystack Chemical Remedy May Have Wide Usefulness

Dicoumarin, Which Reduces the Clotting Ability Of the Blood, May Be Used for Thrombosis

HOPE THAT the haystack chemical, dicoumarin, which reduces the clotting ability of the blood, may have wide usefulness as a life-saving remedy appeared in reports from two groups of scientists to the American Society for Clinical Investigation. Both stressed the fact, however, that it is too soon after dicoumarin's discovery to be sure of its exact value.

The scientists reporting on its use in cases of thrombosis (blood clot), diseases of the blood vessels including one kind of artery hardening, and subacute bacterial endocarditis (a form of heart disease) were Dr. Ovid O. Meyer and Dr. James B. Bingham, of the University of Wisconsin, and Dr. Irving S. Wright and Dr. Andrew Prandoni, of New York.

Dicoumarin, formed in the spoiling of sweet clover, was first isolated and then made synthetically without the haystack's aid by Prof. Karl Paul Link and associates at the University of Wisconsin. He had become interested in the problem because when cattle eat spoiled sweet clover their blood loses its ability to clot and slight bruises may cause fatal bleeding. Medical scientists immediately saw the possibility of using this chemical to prevent formation of frequently fatal blood clots which sometimes follow operations.

Success in preventing formation of clots in the large blood vessels of the legs after operation and in preventing a second clot on the lung in patients who

have already had one, have been reported by Dr. Edgar V. Allen and Dr. Nelson W. Barker, of the Mayo Clinic and the University of Minnesota.

Dicoumarin, it is emphasized by all the scientists, does not dissolve or cure a blood clot once it has formed, and in Dr. Meyer's opinion there is not yet enough evidence to say that it prevents clot formation.

It has also a dilating effect on the small blood vessels near the surface of the body and in the fingers and toes. This effect may be useful in cases where these small blood vessels are growing narrower because of disease such as artery hardening. It apparently acts to heal vascular ulcers through this dilating effect, Dr. Prandoni reported.

Chief disadvantage of dicoumarin is the danger of its causing severe bleeding. The chemical can be used safely, medical scientists believe, if the dose is carefully controlled and the patient is in the hospital having tests made frequently enough to detect the advent of dangerous bleeding.

Dicoumarin can be given by mouth as well as by hypodermic injection. This, with its cheapness, gives it an advantage over another anti-clotting chemical, heparin, obtained from animal tissues. Heparin acts immediately, however, whereas dicoumarin requires 24 hours to take effect.

The bleeding that may follow dicoumarin can be controlled by transfusions of fresh blood but not by the anti-

bleeding vitamin K. This and other evidence suggests that dicoumarin exerts its anti-clotting action on the blood in the liver.

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ENTOMOLOGY

Two New Insect-Fighting Chemicals Are Announced

WAR AGAINST man's hordes of insect foes can go on, with all-American munitions replacing war-scarce plant materials like pyrethrum and rotenone, and metals like copper and mercury. Two new insecticides, one of them deadly to fungi also, have been developed by scientists in the laboratories of E. I. du Pont de Nemours & Company. Neither insecticide requires use of imported materials.

One is made in part from that bane of gastronomically indiscreet small boys, castor oil. It is known chemically as isobutyl undecylene amide, but for convenience has been given the reference symbol IN-930. Although America's pre-war supply of castor oil was imported chiefly from Brazil, it is possible to raise castor beans in this country to meet the emergency.

Seeds, leaves and other parts of the castor bean contain an exceedingly poisonous substance, ricin, which has been suggested as an insecticide. However, it is so toxic to human beings and domestic animals that the du Pont chemists prefer not to use it in an insecticide intended for general distribution.

The other new means of repelling insect onsets has been found very effective in preventing Japanese beetles from feeding on foliage. It is also a good fungicide for use against such plant diseases as blue mold of tobacco, apple scab and rust, and brown rot of stone fruits. It has been tried out at experiment stations in Delaware, Connecticut and New York, with good success reported.

The only metal it contains is iron, which can be obtained from otherwise unusable scrap if necessary. For convenience, the chemists have coined a trade-name, Fermate, by taking the first and last syllables of its rather long technical designation, ferric dimethyl dithiocarbamate.

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Commercial onion growers are entirely at the mercy of amateur gardeners whose perennial onions, if left in the ground all winter, will each spring reinfest commercial beds with the mildew fungus.

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