

MEDICINE

Atherosclerosis Detection

Public Health Service scientists discover five substances in blood involved in normal prevention of hardening of the arteries. Considered a "sizable break."

► A STEP toward early detection and stopping of artery hardening before it has reached a serious stage has been taken by Drs. Christian B. Anfinsen, Ray K. Brown and Edwin Boyle of the National Heart Institute of the U. S. Public Health Service in Washington.

The step they have taken consists essentially in the discovery that five substances in blood and body tissues are involved in the mechanism which normally prevents development of the serious kind of artery hardening called atherosclerosis.

The discovery will not change the treatment of artery hardening within the next year. It may take that long or longer before detection tests on patients can be made. Working out suitable treatment may take even longer. But the discovery is considered a "sizable break" in understanding the underlying mechanism of atherosclerosis.

In atherosclerosis, fatty acids, cholesterol and phospholipids deposit in little spots along the walls of arteries. Later these spots calcify and harden. Hardened arteries force the heart to pump blood at higher pressure and the increased work in time damages the heart.

The fatty acids, cholesterol and phospholipids get into the blood from food. The blood has a milky appearance after a meal heavy in fat. In normal persons this milky appearance is cleared within a few hours. In persons with atherosclerosis and in rabbits fed fatty diets the milky appearance is not cleared. Scientists have therefore considered atherosclerosis due to a fault in the body's handling of fat.

Heparin, a blood chemical known for its anti-clotting action, has recently been found capable of clearing the milky-looking blood after fatty meals. Now Dr. Anfinsen and associates find that heparin plus a protein in blood plasma plus a substance in body tissues act together to produce a clearing factor. The clearing factor, however, does not clear milky-looking blood unless a fifth substance, called a coprotein, is present.

Atherosclerosis presumably may result if any one of these substances is lacking or if they are present but fail to act together in the normal way.

The National Heart Institute scientists have now separated the four substances besides heparin which are involved in blood clearing. They do not yet know what the substances are chemically. They have labelled them P₁ for the protein factor in plasma, T for the tissue substance, CF for the clearing factor and P₂ for the coprotein.

Next step on the research program is to obtain P₁, T, CF and P₂ in pure form. Then will come tests of patients' blood to see which, if any, is lacking in atherosclerosis. After that, treatment to supply the lack can, it is hoped, be worked out.

Details of the research so far are announced in the journal SCIENCE (May 30).
Science News Letter, June 7, 1952

ASTRONOMY

Famous Exploding Star Flares Brightly Again

► A STAR famous for its violent outbursts has exploded again.

First known to explode in 142 A.D., Eta Carina is once again increasing in brightness. If this outburst is as violent as the one a hundred years ago, the star may once again rival in brilliance the brightest star in the sky, then fade to obscurity.

Dr. Olin J. Eggen of the University of California's Lick Observatory, Mt. Hamilton, Calif., has just returned from the Com-

monwealth Observatory in Canberra, Australia. While there he and a French astronomer, Dr. Gerard de Vaucouleurs, searched for the intriguing star, visible only from the southern hemisphere, just to be able to say they had seen it.

At the expected location they found a star four times as bright as Eta Carina when last reported. Special photoelectrical equipment showed the star to be brightening slowly, possibly because of a new explosion.

Science News Letter, June 7, 1952

ENTOMOLOGY

Sick Leaves More Nutritious to Pests

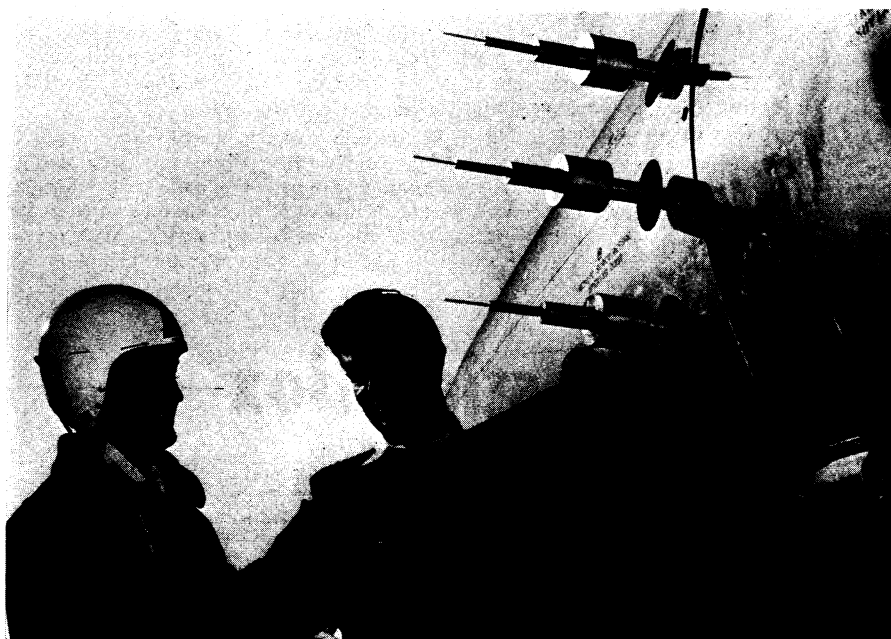
► SOME INSECTS and snails prefer diseased plants as food and this food preference seems to benefit them nutritionally.

Dr. C. E. Yarwood, plant pathologist at the University of California's College of Agriculture, Berkeley, has found that pests, in many cases, prefer diseased leaves to healthy ones. Tests show that the diseased plants actually have a higher nutritional value in plant tissue.

Samples of rust-infected bean leaves analyzed by Alice P. Hall of the home economics laboratory showed up to 20 times the B-complex vitamin pantothenic acid in normal bean leaves.

Tobacco mosaic virus has 10,000 times more concentration in rust-infected bean leaves than in normal leaves.

Science News Letter, June 7, 1952



ICE-GATHERING CYLINDERS—Controlled from inside the plane, these automatic devices pop from the nose, revolve 30 to 40 seconds while ice collects, then retract into refrigerated chambers. From the amount of ice collected and the water weight when melted, the icing rate can be determined. Ice-gathering devices have previously been manually operated.