

BIOCHEMISTRY

New Vitamin Discovered

► **EXISTENCE OF** a new vitamin which may become known as the relaxing vitamin or even as an anti-cancer vitamin is revealed in a report by Drs. Gladys A. Emerson and Karl Folkers of the Merck Institute for Therapeutic Research, Rahway, N. J.

The vitamin has the chemical name, lyxoflavin. It is a member of the B vitamin family. Its existence in human heart muscle was reported in the Archives of the Institute of Cardiology in Mexico in 1947.

Lyxoflavin stimulates growth and weight gain in rats, tests at the Merck Institute show. Although closely related chemically to vitamin B-2, it apparently is not identical with any known vitamin.

Human patients with high blood pressure reported feeling more relaxed when they were given this vitamin, although blood pressure measurements showed no change. Since there was also no change in tempera-

ture, pulse, breathing, urine or blood, the vitamin is safe for trial in a number of diseases. These tests were conducted by Dr. Tom Spies, director of the Nutrition Clinic at Hillman Hospital, Birmingham, Ala.

The hint of a possible anti-cancer action of the new vitamin comes from the suggestion of the Merck chemists that the new vitamin may be the chemical which takes part in the checking of cancer transplants in mice reported for another chemical, 6,7 - dichloro-9-(1-D-sorbityl) - isoalloxazine. In fact, research which led to an improved method for synthesizing lyxoflavin was undertaken by Dr. Folkers and associates in order to get more of the chemical for tests of its effect in checking this transplanted mouse cancer.

Details on the vitamin are in the *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY* (Nov.).
Science News Letter, November 24, 1951

BIOCHEMISTRY

Aid In Blood Disorder

► **A B-COMPLEX** vitamin called the citrovorum factor, which may provide a better understanding of blood diseases and become a valuable agent in their treatment, has been isolated by Drs. John C. Keresztesy and Milton Silverman of the U. S. National Institute of Arthritis and Metabolic Diseases.

The vitamin, discovered several years ago, is closely related to the vitamin folic acid, which has been used successfully in the treatment of anemia and malnutrition. The new factor gets its name from the fact that it is essential to the growth of the laboratory organism *Leuconostoc citrovorum*.

Drs. Keresztesy and Silverman obtained the material as a pure crystalline salt from horse liver by a process described in the *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY* (Nov.). Although the pure vitamin has not been tried in man or against human

disease, laboratory tests have shown it to be more active than either folic acid or the derivatives of folic acid which formerly were thought to be the citrovorum factor.

Folic acid probably does not exist in nature, the chemists said, except as a part of the citrovorum factor, from which it is removed by chemical treatment.

The synthetic derivatives have been employed in the treatment of leukemia, but they have serious toxic effects which put strict limitations on their use, according to the chemists. It has been shown, however, that the newly isolated material is distinctly different from the synthetic "citrovorum factor" and twice as active.

Furthermore, this vitamin may have therapeutic value in preventing the toxic effects of the folic acid derivatives, the researchers asserted.

Science News Letter, November 24, 1951

BIOCHEMISTRY

Man-Made Blood Chemical

► **A BLOOD** chemical twice as powerful as adrenalin for fighting shock has now been made synthetically in the laboratory.

The chemical is called serotonin. Successful synthesis of it is announced by Drs. Merrill E. Speeter, Richard V. Heinzelmann and David L. Weisblat of the Upjohn Company in the *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY* (Nov.).

Crystals of serotonin were isolated from blood platelets in 1948 by Dr. Maurice M.

Rapport, now with Sloan Kettering Institute, New York. At that time *SCIENCE SERVICE* reported that scientists hoped to get enough of the crystals to test the chemical as a remedy for shock and for patients with some kinds of heart disease. But in 1948 Dr. Rapport and associates got only a pinch of the serotonin crystals from a very large quantity of blood.

The chemical acts to constrict small blood vessels and therefore is believed to have a blood-pressure-raising effect. Now that it can

be made synthetically, scientists are finding new possibilities for it. Blood loss from wounds in experimental animals, such as laboratory rats, is markedly reduced when the animals are given serotonin. This is true even when the wounded animals have been given heparin, the anti-blood clotting agent which usually causes small wounds to bleed profusely.

It may be useful as a nasal decongestant, as a counter measure for overdoses of anticoagulants such as heparin and dicumarol, in treatment of the bleeding disease, hemophilia, and in some kinds of surgery such as brain operations where it is essential to keep a dry field free from the bleeding from many tiny blood vessels. All these possibilities will be investigated by the Upjohn scientists.

Chemically, serotonin is 5-hydroxytryptamine.

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INVENTION

Ice Will Not Stick To Treated Surfaces

► **ICE WILL** not stick to surfaces of glass, plastics, metals and ceramics if the surfaces are treated with a silicon-containing composition which brought patent 2,575,141 to Robert Smith-Johannsen of Schenectady, N. Y. General Electric has acquired the patent rights. One particular use is the treatment of ice cube trays so that the ice can be removed with ease. It is a method of treatment claimed to be superior to earlier processes. Important feature is the use of a siliceous primer over which is added a siloxane. The latter is a compound well known to chemists, called polyorganohalogenopolysiloxane.

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VITAL STATISTICS

Too Many Old People Dying; Accidents Blamed

► **TOO MANY** old people are dying.

Our mortality rate for persons over 45, each year, is higher than that of most other countries with comparable health situations.

In 1948 in this country, for instance, the death rate for males over 45 was 3,127 per 100,000, while in Norway the death rate was only 2,372 per 100,000. So far as women are concerned, we do better, with a death rate below that of England and France, among other nations.

One of the causes of the high death rate, according to the Metropolitan Life Insurance Company, is the particularly bad accident record. But far more important, is the effect of the high mortality from the cardiovascular-renal diseases, which account for three-fifths of all deaths after age 45 in our country.

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