

MEDICINE

Blood-Producing Vitamins

Riboflavin and the pellagra-preventive niacin are found to play a part in the manufacture and regeneration of the blood in the animal body.

➤ AT LEAST two vitamins of the B complex group, riboflavin and the pellagra-preventive niacin, appear to be factors necessary for the production and regeneration of the blood in the animal body, according to reports by two groups of scientists. (*Journal of Biological Chemistry*)

A stunting of the red blood cells that are constantly being produced by the blood-forming organs, and a consequent mild anemia, result from a synthetic diet containing all the known essential nutrients except riboflavin, Dr. C. A. Elvehjem and his associates of the University of Wisconsin found. This anemia, produced in dogs, is a direct result of the riboflavin deficiency and readily responds to a corrected diet containing adequate amounts of riboflavin.

Riboflavin is indispensable for normal growth and development. The results of these experiments therefore "suggest that in growing dogs there is a competitive need for riboflavin for growth and hemoglobin production."

It has also been suspected for some time that anemia, at least as found in pellagrins, is in some way associated with niacin deficiency. Dr. Philip Handler and Dr. William P. Featherston, of Duke University School of Medicine, show, apparently for the first time, that the anemia in pellagrous dogs is specifically due to this deficiency and can be corrected only by the administration

of adequate amounts of this vitamin. The red blood cells in this anemia are large but below normal in number and hemoglobin content.

The dietary and other factors that are known to be involved or helpful in the production of blood cells in the body, such as iron, protein, glucose, hemoglobin, the anti-pernicious anemia factor of liver extract, xanthopterin and excessive amounts of cobalt, were without effect when administered to the pellagrous and anemic animals. They were successfully treated, however, with niacin.

Mature red blood corpuscles are not true cells since they do not have nuclei. In the early formative stages, however, they do have nuclei. It is the theory of the Duke physiologists that niacin is necessary for the proper production and maturation of these blood cells. This vitamin is known to play an important role in the respiration of all cells of the body. The lifetime of blood cells appears to be very short and the rate of turnover is quite rapid. Consequently the requirements of niacin for the manufacture of blood cells might be correspondingly great. A niacin deficiency, besides producing the usual symptoms of pellagra, might also lead to anemia because of the inadequate supply of this vitamin for development of the red blood cells in the early stages.

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CHEMISTRY

Plastic Car Tires

➤ PLASTIC TIRES for automobiles may take a place side by side with natural and synthetic rubber tires in post-war days. The same new plastic is suitable for making garden hose so light that the wife may drag it around with ease as she waters the lawn, her feet being protected from dampness at the same time by shoes with soles and heels of the same material. These and many other uses are possibilities of a new plastic recently developed in the Goodyear Research Laboratory.

An automobile tire made of this new

plastic stood up well in an 8,000-mile road test. During these tests the carcass and treads of the tire reached maximum temperatures only slightly higher than those reached in tires of natural rubber, and much below that developed in tires of the Buna S type of synthetic rubber. The tire was made with the standard equipment used to make natural rubber tires. The plastic can be handled in hot molds like natural rubber. It is claimed to be the first elastic plastic capable of being vulcanized during molding oper-

ations. Unlike natural rubber, this plastic is not affected by the rays of the sun.

The basis of this new plastic is a copolymer of vinylidene chloride and vinyl chloride. There are a great number of so-called vinyl plastics now in use. The starting point of them all is ethylene obtained from petroleum. By chemical reaction vinyl chloride, vinyl acetate or other vinyl compounds are obtained from the ethylene. By another process some of them may be polymerized; this means that their vinyl molecules may be put together to form giant molecules not un-

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