



VITAMIN SYNTHESIZERS

Dr. E. T. Stiller (left) and Dr. J. C. Keresztesy (right), who with three other Merck and Co. researchers shared half the Mead Johnson-American Institute of Nutrition award for isolation and synthesis of vitamin B₆, are shown here with Dr. J. Finkelstein, also of Merck's, examining an intermediate product in their more recent vitamin synthesis, pantothenic acid.

important advance in the chemical attack on cancer by which scientists have long hoped to conquer this great killer of mankind. Changing the diet on which cancer thrives brought about this hopeful effect.

Slices of cancer from a rabbit were grown in blood from another rabbit that had been thrown into insulin shock by huge doses of the diabetes remedy, such as are being used in insulin shock treatment of mental disease. This blood, as a result of the insulin treatment, is deficient in sugar. Its effect in reversing the cancer toward normal was explained by the Rochester scientists in the following exclusive statement:

"Unlike normal cells, tumor cells get their energy principally from fermentation of glucose to lactic acid instead of complete oxidation of the sugar. This was shown by Prof. Otto Warburg, German Nobel laureate, and associates as early as 1923. Many attempts have been made to restore normal metabolism and thereby 'burn out' the tumor. Prof. Warburg himself and many others used insulin on tumor-bearing animals, but with no clear indication of success.

"Recently this laboratory has undertaken the use of insulin in a different way, on the hypothesis that it should discourage the tumor's growth by: First, starving it of sugar for glycolysis and, second, promoting oxidation of sugar.

The present experiments show merely that tumor slices placed in hypoglycemic (sugar deficient) serum have their oxidative metabolism markedly increased and the fermentation metabolism greatly diminished.

"Both are changes in the direction of the normal. The Brown-Pearce transplantable carcinoma of the rabbit was used and only young vigorously growing tumors chosen. Slices from the same tumor were studied simultaneously in serum from normal rabbit and from the same rabbit after being thrown into insulin shock. The effect on fermentation probably is due wholly to the lower blood (serum) sugar but the effect on oxidation may possibly be the result of a combination of factors. The experiments offer no proof that insulin will cure or prevent human cancer."

Science News Letter, March 23, 1940

Gallstones Due to Germs?

GERMS may play a part in the chemistry which causes formation of gallstones, experiments by Drs. K. K. Jones and Marie Lorenz, of Northwestern University Medical School, revealed. The material of which gallstones are made may be present normally in gallbladder bile, but it does not crystallize into stones unless chemical conditions are right, they found. (Turn to page 188)

NUTRITION

\$1000 Prize Awarded to Vitamin Researchers

DISCOVERY that humans need the part of vitamin B called riboflavin to keep them healthy and synthesis of another B vitamin, B₆, which has also been used successfully in treatment of humans, won the Mead, Johnson and Company \$1000 award for advances in knowledge of the vitamin B complex at the meeting of the American Institute of Nutrition.

Recipients of the award are: Dr. W. H. Sebrell, National Institute of Health, U. S. Public Health Service, for the riboflavin discovery which has since led to discovery of the cause and cure of the sometimes blinding eye disease, keratitis; and, for the synthesis of B₆, a five-man research team of Merck and Company's research laboratories, Drs. John C. Keresztesy, Joseph R. Stevens, Stanton A. Harris, Eric T. Stiller and Karl Folkers.

Science News Letter, March 23, 1940

MEDICINE

Thiamin Vitamin Relieves Pain of Varicose Ulcers

VITAMIN B₁ (thiamin chloride) is effective in relieving the pain of varicose ulcers, Drs. Alton Ochsner and Marvin C. Smith of New Orleans report. (*Journal, American Medical Association*, March 16.)

Ten women suffering with painful varicose ulcers were treated and all but one were definitely relieved and eight had complete subsidence of their symptoms, in an average of five days. The women varied in age from 27 to 75 years.

Science News Letter, March 23, 1940

Rice is now being marketed in cooked, ready-to-serve form.

If an automobile resembling 1940 models had been designed in 1900, it would have weighed three times as much as today, made of materials then available.

RADIO

Conway P. Coe, U. S. Commissioner of Patents, will announce plans for the celebration of the U. S. Patent Law Sesquicentennial, to be held in Washington, D. C., in April, as guest speaker on "Adventures in Science" with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Thursday, March 28, 4:15 p.m., EST, 3:15 CST, 2:15 MST, 1:15 PST.

Listen in on your local station. Listen in each Thursday.