

Chang and J. McGinnis (Dept. of Animal Sciences, Washington State Univ., Pullman). *Proc. Soc. Exp. Biol. Med.* 124, 1131-5 (1967). Mature male quail remained in a good physical condition even though no vitamin D was given for a year. In contrast, high mortality occurred in the vitamin D deficient females, even though calcium balance was not different from that observed in the male quail. It was suggested that the requirement of adult male birds for vitamin D is either very low or non-existent. Injections of testosterone and estradiol into vitamin D deficient hens did not influence egg production, but significantly improved bone ash of tibia, sternum and femur. Alleviation of debility caused by the vitamin D deficiency was observed in laying hens when testosterone was injected.

**PRE-BETA LIPOPROTEINEMIA. ITS BEARING ON THE DIETARY MANAGEMENT OF SERUM LIPID DISORDERS AS RELATED TO ISCHEMIC HEART DISEASE.** D. F. Brown and J. T. Doyle (Cardiovascular Health Center and Subdepartment of Cardiovascular Med., Albany Med. College, Albany, New York). *Am. J. Clin. Nutr.* 20, 324-32 (1967). Serum triglyceride and cholesterol levels were determined in 672 men aged 50-65, 83 of whom had ischemic heart disease. Simultaneously obtained samples of plasma were subjected to paper electrophoresis in albumin-containing buffer and stained for lipoproteins. The presence of a pre-beta band indicative of endogenous triglyceride and lipid staining material at the origin, indicative of dietary triglyceride, was observed. A positive correlation was observed between the intensity of staining of the pre-beta band and the serum triglyceride and cholesterol level. Reduction of serum triglyceride levels in subjects with gross hyperglyceridemia by calorie restriction or carbohydrate restriction or with the use of Atromid S alone was associated with a parallel reduction in intensity of the pre-beta band and associated reduction in cholesterol and triglyceride.

**THE MECHANISM OF SUBSTRATE INHIBITION OF PALMITYL COENZYME A:CARNITINE PALMITYLTRANSFERASE BY PALMITYL COENZYME A.** J. Bremer and K. R. Norum (Inst. of Clinical Biochem., Univ. of Oslo, Rikshospitalet, Oslo, Norway). *J. Biol. Chem.* 242, 1744-48 (1967). The substrate inhibition of palmityl coenzyme A:carnitine O-palmityltransferase (EC 2.3.1.-) by palmityl-CoA has been studied. Besides being a substrate for the enzyme, palmityl-CoA was found to behave as a competitive inhibitor for the second substrate (carnitine). The  $K_i$  was found to be approximately  $3 \times 10^{-6}$  M, while the  $K_m$  for palmityl-CoA was found to be approximately  $10^{-5}$  M. Thus, the affinity of the palmityl-CoA as an inhibitor for the enzyme was at least as high as its affinity as a substrate. These results explain the pronounced substrate inhibition by palmityl-CoA. The  $K_m$  values for the other substrates were found to be: L-carnitine,  $2.5 \times 10^{-4}$  M; L-palmitylearnitine,  $4 \times 10^{-5}$  M; and CoA,  $5 \times 10^{-6}$  M. The possible physiological importance of the reaction kinetics of carnitine palmityltransferase is discussed.

**THE EFFECTS OF DETERGENTS ON PALMITYL COENZYME A: CARNITINE PALMITYLTRANSFERASE.** *Ibid.*, 1749-1755. Effect of detergents on the activity of palmityl coenzyme A:carnitine O-palmityltransferase has been investigated. A series of detergents (D-palmityl-carnitine, palmitylcholine, caprylnylcholine, free fatty acids, deoxycholate, digitonin, Tween 20, Tween 80, and Triton X-100) have been found to stimulate the incorporation of L-carnitine- $\text{CH}_3\text{-}^3\text{H}$  into L-palmitylearnitine in the presence of CoA. The effects of D-palmitylearnitine and Tween 80 were investigated further by studying their effects on the reaction  $\text{Palmityl-CoA} + \text{carnitine} \rightleftharpoons \text{palmityl-carnitine} + \text{CoA}$  in both directions. The effects of these detergents were found to depend on the concentration of palmityl-CoA in the reaction mixture. With high concentrations of palmityl-CoA, the detergents were inhibitory to palmityl transfer. In this case no significant change in the  $K_m$  for carnitine was observed. The detergents initially had no or only a weak inhibitory effect on the palmityl transfer from palmitylearnitine to CoA, but, as the reaction proceeded, their effect changed to stimulation because they prevented a strong product inhibition by palmityl-CoA. The mechanism of the detergent action is discussed, and it is concluded that their main effect is to prevent palmityl-CoA from acting as a competitive inhibitor of L-carnitine (and L-palmitylearnitine). The substrate function of palmityl-CoA is also interfered with, but to a relatively much smaller extent than its inhibitory function.

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Sophie Plechner of Carter-Wallace, Inc., was presented with a plaque in honor of her seven years service on the advisory committee of the Society of Cosmetic Chemists. Dr. Plechner was president of the Society in 1961. Henry Maso, of American Cholesterol Products, Inc., current president of the Society, made the presentation at a recent advisory committee meeting.

## Papers Sought for Spectroscopy Meeting

The Chicago Section of the Society for Applied Spectroscopy, in cooperation with the Chicago Gas Chromatography Discussion Group, will serve as host for the Seventh National Meeting of the Society for Applied Spectroscopy, which will be held at the Sheraton-Chicago Hotel in Chicago, Illinois, during the week of May 13-17, 1968.

Original papers are being solicited in all areas of theoretical and applied spectroscopy and gas-liquid chromatography, including activation analysis, arc-spark emission, atomic absorption, far infrared, flame emission, infrared, mass spectrometry, molecular luminescence, NMR-EPR, nuclear particle and gamma ray, Raman, solid state, ultraviolet and visible, and X-ray.

Anyone interested in presenting a paper at this National Meeting is invited to submit a brief abstract of not more than 150 words to Dr. E. Lanterman, Program Co-chairman, Borg-Warner Corporation, R. C. Ingersoll Research Center, Wolf and Algonquin Roads, Des Plaines, Illinois 60018. The final date for receipt of titles is January 15, 1968. Abstracts must be received no later than February 1, 1968.

Being conducted concurrently with the Meeting will be an extensive exhibit of scientific instrumentation, exhibit seminars, and an employment bureau.

## Plastics Engineers to Study Marketing Techniques

To keep its members abreast of the latest advancements in marketing, the Reinforced Plastics Division of The Society of the Plastics Industry has decided to enlarge its scope of activities to include a session on that subject at its annual conference to be held Feb. 6-9, 1968, at the Shoreham Hotel in Washington, D.C. Heading this session on marketing will be E. N. Dorman of CIBA Products Co., Summit, New Jersey.