modate 192 students and the chemical laboratories 480 students.

AT the University of Virginia, Dr. Sydney William Britton, of the Johns Hopkins University, has been appointed professor of physiology as successor to Dr. Homer W. Smith, who has become head of the physiological department of New York University.

DR. EDWARD F. CASTETTER, associate professor of botany in the Iowa State College, has resigned to accept the headship of the department of biology of the University of New Mexico at Albuquerque.

A. BRAZIER HOWELL, secretary of the American Society of Mammalogists, who for the last six years has been connected with the U. S. Biological Survey and the U. S. National Museum, has been appointed lecturer in comparative anatomy at the Johns Hopkins Medical School. Dr. Clarence E. Ferree has been made resident lecturer in ophthalmology and director of the laboratory for physiological optics. His wife, Dr. Gertrude Rand, will be associate professor of ophthalmology.

PROFESSOR E. A. MILNE, Beyer professor of applied mathematics in the University of Manchester, has been appointed as from January 1, 1929, to the Rouse Ball professorship of mathematics at Oxford. Under the will of Mr. W. W. Rouse Ball, of Trinity College, Cambridge, money was bequeathed for the foundation of Rouse Ball chairs of mathematics at Oxford and Cambridge. Early this year Professor J. E. Littlewood was appointed to the Cambridge chair.

DISCUSSION AND CORRESPONDENCE

SPARING ACTION OF FAT ON THE ANTI-NEURITIC VITAMIN

IF fat be added to an almost fat-free diet,[1] the amount of the anti-neuritic vitamin required to establish any definite level of growth or frequency of ovulation is always less than is required when fat is absent; in other words, fat acts to spare the water soluble anti-neuritic vitamin. Animals on inadequate levels of the vitamin are not only more gravely impaired in stature and ovulation when fat is absent than when present, but they invariably develop fatal beriberi sooner. A level of anti-neuritic vitamin can be found, for instance, on which all animals deprived of fat die in slightly over a month, but on which animals allowed ten per cent. of dietary fat invariably live over four months. Furthermore, fat-free animals near death from beriberi when given only three doses of rice-polish-extract resume more energetic growth if also shifted to a diet with fat present; in spite of this growth and hence increased body substance they also come down later with their second attack of beriberi. Our experiments have been performed with adequate levels of the other water soluble vitamin B (P P) and of the fat soluble vitamins A, D and E, so that we are not at liberty to assign the remarkable favorable action of fat to increased amounts of these substances. Nor have we been able thus far to establish the presence of the anti-neuritic vitamin itself in the fats used. It would appear that we must recognize their mediation in those unknown metabolic processes for which anti-neuritic vitamin is essential. The clear-cut facts herein reported go far toward explaining the beneficial effect of fats[2] recently emphasized by us in earlier studies on highly purified diets.

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[1] We have employed Diet 542 (casein—extracted one week with acid water—20, cane-sugar 70, autoclaved yeast 10, salts 4, 2 drops cod-liver oil (Patch) daily) and Diet 550 (casein 20, cane-sugar 59, lard 10, autoclaved yeast 10, salts 4, 2 drops cod-liver oil (Patch) daily). For both diets the anti-neuritic vitamin was furnished at various levels by separately fed unautoclaved yeast. E is administered as a few drops of wheat germ oil daily.

NOTATION IN ATOMIC STRUCTURE

IN most books and papers on atomic structure little attempt is made to distinguish between frequencies and wave numbers except where it becomes necessary to give numerical examples. Both these quantities are usually designated by the letter ν.

It is our practice to use a tilde over the symbol when it indicates wave number, *i.e.*, $\tilde{\nu} = \nu/c$. Similarly, when dealing with the Zeeman effect, it is sometimes desirable to use the wave number corresponding to the frequency of the Larmor precession. This frequency may be designated by L, and the wave number L/c is then denoted by $\tilde{L}$. We have found this notation extremely convenient.

There is need for standardization of the symbol for Schrödinger's wave amplitude. We usually indicate this by the symbol Ψ. The wave amplitude referring to an individual quantum state of a system of one degree of freedom is indicated by Ψ_n, where n is the quantum number of this state, and then

$$\Psi_n = \psi_n \exp(-2\pi i E_n t/h)$$

where ψ_n indicates the part of Ψ_n depending on the coordinates. The choice of the minus sign in the exponential factor is dictated by the fact that we often use the transformation

[2] Evans and Burr, "A New Dietary Deficiency with Highly Purified Diets," *Proc. Soc. Exp. Biol. and Med.*, Vol. 24, 740 (1927); Vol. 25, 41 and 390 (1927–1928).