in the primary rainbow. Beneath the primary bow, ending with brilliant violet, were green, violet, green, violet, and green, violet. The first repetition of green and violet was clear over the larger part of the primary bow, but the second and third showed only from time to time and then most clearly near the zenith of the arcs.

Supernumerary rainbows are said usually to show only green and red. They are interference phenomena, and in the case here reported it seems as if the red was superposed over the violet so as to produce the unusually brilliant bands of red-violet even in the primary bow. A complete explanation of these phenomena is presented by Humphreys, as noted above. (TERENCE T. QUIRKE, *Department of Geology and Geography, University of Illinois.*)

Everyone who has had occasion to teach vitaminology must have experienced considerable difficulty with the commonly accepted terminology, both because of the cumbersomeness and because of the incorrect implications of some of the terms used. In the interest of further simplification and clarification, the following suggestions are offered:

(1) Since vitamin A activity results from activation of carotene, it is suggested that "accarene" be adopted as an official name. This term is a condensation which implies nothing as to its physiological action or therapeutic effects; it is a short term, and yet the chemical relations are not too completely obscured. The rather commonly used "axerophthol" is objectionable not only because of its length and rather awkward pronunciation, but more importantly, because it implies one rather superficial and nonspecific therapeutic influence. This is always objectionable, because it implies that the vitamin is of importance only when deficiency occurs.

(2) It is suggested that "ossiferol" be substituted for "calciferol" as a specific designation for vitamin D_2. The objection to the older name is that it leaves out of consideration all reference to the influence of the vitamin on the metabolism of phosphorus in relation to bone. Certainly, this phase of its action is as important, if not more so, than the influence on calcium. "Calciferol" does have the merit of referring to a physiological process but to only a limited part of it.

(3) It is suggested that, since vitamin D_3 is produced by activation of 7-dehydrocholesterol, this latter term be telescoped to "sedesterol." As in the case of vitamin A, there is no implication of chemical nature or of physiological action; the word is euphonious and not cumbersome.

It seems desirable that all names of vitamins be based on (a) chemical composition, (b) physiological rather than therapeutic action, or (c) be distinctive but nonspecific. "Ascorbic" acid is especially objectionable because it refers to a deficiency state rather than to chemical composition or physiological function in healthy organisms. From this point of view, it would be highly preferable to restore the original chemical designation of hexuronic acid.

The above criticisms apply equally well to tocopherol as a designation for vitamin E activity. However, no suggestion is made for any change until its function in the human is better understood. (C. I. REED, *University of Illinois, Chicago Professional Colleges.*)

Book Reviews

Fundamental theory. A. S. Eddington. Cambridge, Engl.: at the Univ. Press, 1946. Pp. viii + 292. 25/-.

This posthumous work of the great British astronomer, which supersedes his *Relativity theory of proton and electron* (Cambridge, 1936) and *The combination of relativity theory and quantum theory* (Dublin, 1943), was prepared for the press by E. T. Whittaker, of Edinburgh University. It represents the clearest expression which Sir Arthur achieved of his theory of the relation of relativity theory and quantum theory and his deduction of the value of certain fundamental constants of nature, such as the masses of the electron and proton, the fine structure constant, the rate of recession of the nebulae, the number of particles in an Einstein universe, and the nuclear-range constant. On pages 66 and 105, and in Chapters IX and XI are set forth the *calculated* values of more than 30 constants of nature, nearly all of which are in most remarkable agreement with experiment. The reviewer knows of no other theory which achieves such accuracy of prediction over so wide a range of physical phenomena.

Since Eddington worked almost completely alone for the last 20 years of his life, the hidden assumptions in his physical reasoning are not always the same as those of more well-known schools of quantum theorists. This accounts for the fact that those who approach his theory after a thorough grounding in more conventional methods find it very difficult to understand and even repellent. Further, since he created his theory by daring intuitions rather than by careful argumentation (as happens with any essentially new theory) and since it seems to require for its adequate formulation much abstract algebra with which Eddington was not too well acquainted, there are occasional gaps and even inconsistencies in the logic of his presentation. However, even though Eddington's arguments are not always convincing, his formulas are related to one another in such an astonishing way, which cannot be explained by chance, and result in the prediction of so many facts in complete agreement with experiment that the reviewer is persuaded that the theory is essentially correct while he admits that the rationale of the dependence of the formulas on Eddington's basic notions is still far from satisfying.

Eddington's reputation as an *astronomer* is already secure. If the above judgment as to the value of *Fundamental theory* proves to be well founded, he will rank with Newton and Einstein as one of those few geniuses who have effected fundamental revolutions in our knowledge of the physical world.

A. J. COLEMAN

13 rue Calvin, Geneva, Switzerland