

# New Books

L.A. Witting, Book Review Editor



*The Fat Soluble Vitamins, Handbook of Lipid Research*, Vol. 2, Edited by H.F. DeLuca, (Plenum Press, 227 W. 17th St., New York, 1978, 287 p., \$27.50).

The first volume of this series, "Fatty Acids and Glycerides," edited by A. Kuksis, was recently reviewed in this column. In the present volume, Vitamin A is reviewed by L.M. DeLuca, Vitamin D by H.F. DeLuca, Vitamin E by M.C. Scott, and Vitamin K by J.W. Suttie. Each of these authors have made major contributions in the areas they have reviewed. In the preface, DeLuca convincingly makes the point that the fat soluble vitamins function quite differently than their soluble counterparts. Nowhere in this volume do we see a fat soluble vitamin acting as the prosthetic group of an enzyme. Such a role has not been precluded in all cases, but the trend does not seem to be in this direction. There is considerable support for the idea that Vitamin D or the compounds produced from it should be considered with the hormones rather than the vitamins. Research in this area has contributed to our knowledge of calcium and phosphorus metabolism. This chapter seems particularly up to date, with references into 1977 and approximately one-fourth of all citations being to literature published in 1975-1977. Glycosidation of glycoproteins via retinyl phosphate glycoside is certainly an attractive explanation of some portion of the activity of Vitamin A. It will be interesting to learn why rather similar reactions require dolichol in one case and retinol in another. It has become apparent that certain proteins undergo modification which results in activation. This now seems to be the case with the clotting proteins which undergo a post ribosomal  $\gamma$ -carboxylation of glutamic acid residues. Vitamin K is involved in some, as yet, poorly understood manner in this activation. Scott has made extensive, noteworthy contributions to the literature on both Vitamin E and selenium. As is evident in the multiple volumes in Pryor's series, "Free Radicals in Biology," this has become a very active area with considerable constructive input from many disciplines. This particular review, however, is largely historical in nature: 96% of the citations are to 1974 or earlier publications, and 35% predate 1960. The sections on chemistry of Vitamin E, assay, and deficiency states are particularly comprehensive. Scott appears to find the literature on diseases responsive to Vitamin E therapy somewhat more convincing than did Farrell in this recent chapter on this topic.

The four chapters are supported by comprehensive bibliographies. Extensive chapter outlines plus a somewhat limited index make location of topics relatively simple. Any editor who can avoid errors in references to De Luca and DeLuca must obviously have done a careful job. The volume is well produced and the illustrations are of high quality. Not too many years ago a book on fat soluble vitamins would have been recommended primarily to nutritionists. With the exception of Scott's historical chapter, this volume deals largely with biochemistry and will be best utilized by graduate level students in biochemistry.

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*Function and Biosynthesis of Lipids, Advances in Experimental Medicine and Biology*, Vol. 83, Edited by N.G.

Bazan, R.R. Brenner and N.M. Giusto, (Plenum Press, New York, 1977, 646 p., \$59.50).

This volume is essentially the proceedings of a meeting held in Argentina in November 1976. The subject matter is organized under four headings; 1) lipid involvement in the biogenesis of membranes, a) biosynthesis of fatty acids, b) biogenesis and organization of cellular membranes; 2) glycosphingolipidsgangliosides; 3) lipids in neural tissue, a) biosynthesis and turnover, b) functions; 4) essential fatty acids in nutrition.

In a short preface, Brenner traces the origin and development of the various lipid biochemistry research groups in Argentina. One has the very distinct impression that the organizers deliberately set out to document the quality of research conducted by these groups by allowing the reader to compare and contrast their papers with those of investigators from other countries. The selection of topics appears to have been determined by the areas in which the Argentine investigators have particular strength. Approximately one-half of the papers are by Argentines, and the rest are from other internationally recognized investigators in the areas covered. Each section leads off with one or more papers by non-Argentine scientists such as Sprecher, James, Trams, Wiegandt, Mead, Hawthorne, Holman and Carroll, followed by papers, five including Brenner and six including Bazan as authors, from the local laboratories. The 53 individual contributions range from 5 paragraphs (Wolfe) to 24 pages (James) and according to the editors include both original papers and reviews.

Although prepared from camera ready copy, the copy is uniform in appearance and all papers appear to have originated from a single typewriter. As is common to most such symposia, style, coverage, quality and organization are somewhat erratic. Six papers on retinal lipids, for instance, are scattered through five sections. To some extent the volume title and section headings are misleading. This is to a very great extent a symposium on unsaturated fatty acids. Section 1a, for instance, while headed "biosynthesis of fatty acids," focuses almost entirely on desaturases and the elongations occurring between sequential desaturations. This volume can be recommended with one distinct reservation. The potential purchaser should peruse the table of contents rather than decide from the title that the subject matter of this book is in an area of interest. On balance, it should be noted that quite a large amount of excellent material is presented, and this volume should be available in any active lipid biochemistry laboratory.

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