

even to define and has proved much more difficult to assess. As yet, no specific alteration in any of the systems of natural resistance such as the Properdin one has been detected in the diabetic.

However, this does not mean that some alteration in an essential system, inherited concurrently and separately with his inherited metabolic abnormality, may not be present in the diabetic patient. If one considers that "genes control the potentiality of enzyme syntheses" (Spiegelman and Campbell)⁸ then it does not seem too speculative to envisage a subtle inherited alteration in the enzymatic synthesis of the diabetic host's responsive metabolites when confronted by the aggressive metabolites of the parasite. Induced enzyme formation in the micro-organism (Spiegelman and Campbell)⁸ and metabolic adaptations in the mammalian organism (Knox)⁹ must be conditioned by the genetic structure of both.

To express it in the words of Snyder,¹⁰ "Each individual has a unique assembly of genes and will have his own mode of reaction to disease, whether it be presented through infection, trauma, stress or malnutrition, or wholly from within through biochemical error. The conviction that the genetic constitution is involved to a greater or lesser extent in all disease will serve as a stimulant to look beyond the secondary aspects of pathology and to search for the primary genic action in each case."

It remains to be seen whether the genotype of the diabetic may play an essential role in his peculiar susceptibility to infections other than through his known inherited metabolic abnormality. All we may state with any degree of confidence at present is that the intrinsic in-

herited defects in metabolism that characterize the diabetic state are factors in his susceptibility to infection.

The inescapable conclusion from all this would seem to be that these defects in his metabolism must be remedied or controlled to the best of our ability if the diabetic is to escape his predestined tendency to infection or to be rescued if infection occurs.

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BOOK REVIEW

THE LIPIDS: THEIR CHEMISTRY AND BIOCHEMISTRY. *Vol. III*, by Harry J. Deuel, Jr. \$25, pp. 1065, Interscience Publishers, Inc., New York, 1957.

This is the third volume of Dr. Deuel's comprehensive treatise on the chemistry of the lipids. The present volume is published posthumously and together with its predecessors forms a fitting monument to the genius and indefatigable labors of Dr. Harry J. Deuel, Jr. The present volume is concerned with the biosynthesis, oxidation, metabolism, and nutritional value of lipids. There are fourteen chapters comprising some 1,000 pages. This book is an indispensable reference for biochemists working in this complex field. Chapter I deals with the problems of the digestion, absorption, transport and storage of lipids. Chapter II is a masterly detailed account of the biosynthesis of various forms of lipids in the animal body. It serves as a most valuable exposition of the development and the present status of this field. Chapter III covers the problems in oxidation and metabolism of the triglycerides, phospholipids, and fatty acids in the animal body. Chapter IV is an able exposition

of the vexed question of the conversion of fat to carbohydrate. Deuel comes to the balanced conclusion that a net increase of carbohydrate from fat does not occur in the mammalian organism. The phospholipids are treated with respect to oxidation and metabolism in Chapter V. The role of the low molecular weight fatty acids, such as acetic, formic and propionic, in the intermediary metabolism of fat is treated in Chapter VI. The biochemistry of unusual forms of fatty acids, such as branch chain, hydroxy, and keto acids, etc., is treated in a separate chapter. Excellent and complete discussion of the sterol chemistry comprises some 100 pages in Chapter VI! The biochemistry of the fat soluble vitamins is treated in Chapters IX to XII. The discussion here is most thoroughgoing, of historical significance, and presents the modern developments most succinctly. Chapter XIII deals with the interesting biochemistry of the essential fatty acids, and the final chapter concerns itself with the nutritional value of fats. There is an excellent author and subject index. This particular volume of a series of three deserves high rank among the present available treatises on the rapidly developing field of lipid chemistry.