The occurrence of these conditions is not associated with socioeconomic status, however, and the numbers affected are too small to contribute to the prediction of variance in IQ in the population. In any event, prospective studies of unstratified populations are usually not the method of choice for studying these conditions.

There is much more of interest in this book, although the presentation is disciplined to a fault, so that the broader implications of the findings are seldom broached. There is also much more in the CPP that remains unreported and demands study. No single analysis of these important topics, even of monograph length, can satisfy all readers or meet the needs of all investigators. Some might ask, for instance, for analyses that merge the data on black and white children and do not keep them separate throughout, as was done here. One effect of merging might be to heighten the proportion of variance in IQ accounted for by social status and maternal education. Would such a result be nearer or further from the truth? Some might prefer to consider systematically the contribution of the predictors to various outcomes taken in sequence, for example, newborn infant dimensions, 8-month-old Bayley scores, and so on. There is considerable interest, too, in anthropometric measures as outcomes. Clearly even a volume as thoroughly executed as this one cannot do justice to this rich data source.

Since no one in his senses would contemplate repeating the CPP, the scientific need for intensive exploration of this massive data set is compelling. A strong case can be made for setting up the materials as a public resource. The public interest stems from the vast federal expenditure on the CPP, from the multiple data sources and contributors, and from the probability that many of the data will be left fallow or incompletely used if they are not made available. The tapes ought now to be made readily accessible to researchers and their use encouraged. A mine the CPP certainly has proved to be, and it deserves to be fully exploited.

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Muscle Research

Exploratory Concepts in Muscular Dystrophy II. Control Mechanisms in Development and Function of Muscle and Their Relationship to Muscular Dystrophy and Related Neuromuscular Diseases. Proceedings of a conference, Carefree, Ariz., Oct. 1973. A. T. MILHORAT, Ed. Excerpta Medica, Amsterdam, and Elsevier, New York, 1974. xviii, 664 pp., illus. $51.95.

In 1973 the Muscular Dystrophy Associations of America, with the Italian National Research Council, sponsored an international research meeting. The resulting volume is testimony to the good works of this voluntary organization. With the arrested and uncertain growth of the National Institutes of Health, it has become a major force in supporting muscle research that has wide ramifications.

The volume contains 52 papers, which encompass the field. From the variety of investigations reported several trends can be discerned:

1) Muscle cell culture has come to occupy a central position in studies of membrane specialization, such as development of acetylcholine receptors (Fambrough and Devreotes) or surface alterations that prepare for the fusion of myoblasts to form myotubes (Bischoff and Lowe), and of nerve-muscle interaction (Steinbach and Heinemann).

2) Structural differences of the contractile proteins from different sources (Adelstein and Conti; Adelman; Perry) and factors controlling the synthesis of these proteins (Schubert and Tarikas; Sarkar; Morkin; Morales *et al.*) are being identified.

3) The interactions between these proteins (Ebashi *et al.*; Bárány *et al.*) have become linked to phosphorylation, influenced by calcium and protein kinase (Krebs *et al.*) as well as sarcoplasmic reticulum (Margreth *et al.*).

4) The relative importance of neural control and activity patterns of muscle in determining the physiological and biochemical characteristics of individual muscles (Buller; Close; Mommaerts; Schiaffino *et al.*; Robbins; Sréter *et al.*; Romanul *et al.*) continues to be a major unsolved problem.

5) New ultrastructural techniques, including freeze-fracture (Rash *et al.*), scanning electron microscopy (Shimada and Fischman), and quantitative morphometry (Eisenberg), are beginning to be applied to the study of muscle membranes.

6) At this meeting, the emphasis was on basic science. Only a few papers are directly concerned with dystrophies, and more of these are concerned with mouse and chicken than with the human diseases. Times seem to be changing, however. Human sarcolemma is beginning to be studied in dystrophic muscle (Peter *et al.*); mitochondrial biochemistry has been applied to human disease (DiMauro *et al.*); disorders of carnitine metabolism cause different syndromes in man (Engel *et al.*; DiMauro *et al.*); diseased human muscle can be grown in culture (Askanas); and the neurogenic theory of the dystrophies (McComas *et al.*) is challenged (Buchthal *et al.*; Desmedt and Borenstein).

The accelerating attention to muscle augurs well for the future solutions of important problems, and this volume amply records the present state of affairs.

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Vitamin B_2

Riboflavin. RICHARD S. RIVLIN, Ed. Plenum, New York, 1975. xiv, 434 pp., illus. $46.90.

This volume is a collection of 12 review articles designed to "represent an interdisciplinary approach to an understanding of the chemistry, physiology, and medical significance of the vitamin riboflavin." However, I found the focus to be almost exclusively on physiology and medical significance. Only the introductory chapter by Weimar and Neims deals with any of the chemical properties of flavins that are relevant to their biological function. This chapter is worth reading and presents a sensible although telescoped set of comments on spectroscopic properties of the isoalloxazine system, followed by a section on binding of flavin coenzymes to apoproteins and two or three pages on riboflavin synthesis. Only a single paragraph is allotted to how flavin coenzymes function. This strikes me as a major defect.

Chapters 2 and 3 deal with methods for flavin analyses in tissues. They could easily be omitted from the volume, since they provide technical information only and the methods have been reviewed recently in *Methods in Enzymology*. Replacing them with a full chapter on flavin chemistry including dark reactions and susceptibility to nucleophilic attack or electrophilic attack depending on oxidation state would have been a service. A chapter on the types of enzymatic reactions that require flavins as obligate coenzymes could then also have been inserted.

Such chapters would have provided a molecular basis for the evaluation of sub-