

## Book Reviews

*The Nature and Significance of the Antibody Response.* A. M. Pappenheimer, Jr., Ed. Columbia Univ. Press, New York, 1953. 227 pp. Illus. \$5.

A collection of 14 papers presented to a symposium held at the New York Academy of Medicine in March 1951. The contents are as follows:

Theories of Antibody Formation by Felix Haurowitz; Sites of Antibody Formation by Phillip D. McMaster; Response of Immunized Animals to Specific and Non-specific Stimuli by Jules Freund; Factors Influencing the Antibody Response by Geoffrey Edsall; Persistence of Antibodies in Man after Immunization by Michael Heidelberger; Unity and Diversity of Antibodies by Elvin Kabat; Valence of Antibodies by A. M. Pappenheimer, Jr.; Experimental Production of Skin-Sensitizing Antibodies by William Sherman; Skin-Sensitizing Antibody and Allergy and Resistance to Insulin by Francis C. Lowell; Immunological Reactions Mediated through Cells by Merrill W. Chase; Fate of  $I^{125}$ -Labeled Bovine Gamma Globulin in Rabbits by F. J. Dixon, S. C. Bukantz, G. J. Dammin, and D. W. Talmadge; Fate and Effects of Injected Protein Antigens by Charles A. Janeway; The Localization of Antigen in Tissue Cells by Means of Fluorescein-Labeled Antibody by Albert H. Coons; and Radioactive Tracers in the Study of Antitissue Antibody by David Pressman.

The purpose of the symposium, as set forth in the preface, was to organize the present knowledge of antigen-antibody reactions in tissues. Unfortunately, this ambitious program was only partly realized. Because of the limited amount of detail and scope of material considered, the title of the book, as well as titles of the respective chapters, is more impressive than the contents. To those closely associated with this field, much of the material has a very familiar ring. The chapters on Sites of Antibody Formation and Unity and Diversity of Antibodies cover their subjects especially well, are clearly presented, and present reviews that heretofore have been treated only superficially.

In general, the discussions are concise and clearly present the work and thinking of the respective authors. The reader is likely to be disappointed in the very limited discussion of the participants which is included at the end of each of the three groups of papers. Pertinent questions dealing with the topics under discussion were not raised and, in some instances, questions that were raised were apparently ignored. This may have been due in part to the familiarity of the participants with one another and their work. There is so much current interest in the effect of radiation on antibody reactions and formation and the role of isohemagglutinins in blood disorders that these could have been considered more seriously. Regardless of one's familiarity with the significance of antigen-antibody reactions, however, the discussions are stimulating and present provocative concepts of fundamental importance.

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*Sexual Behavior in the Human Female.* The Staff of the Institute for Sex Research, Indiana University: Alfred C. Kinsey, Wardell B. Pomeroy, Clyde E. Martin, Paul H. Gebhard, and others. Saunders, Philadelphia-London, 1953. 842 pp. Illus. \$8.

The importance of this work in its field is second only to that of the preceding volume by Kinsey and his collaborators, the famous *Sexual Behavior in the Human Male*, which appeared in 1948. In the present instance, however, it is not necessary to give readers a digest of the volume. That has been adequately provided in the popular press. Nor is it necessary to describe in detail the methods of sampling, interviewing, and checking used in the analysis of the sexual histories obtained. What was said previously [*Quart. Rev. Biol.* 23, 39 (1948)] about the validity of the companion study applies sufficiently well to this one. In short, no such extensive report of human female sexual behavior has ever before been assembled; and controversial though certain methods and conclusions may be, no other study has been based on so many individuals (5940) or has attempted to provide an equal degree of statistical reliability. This will remain the primary source of scientific information on the subject for a long time to come. This being so, the present review may be devoted to constructive criticism rather than to summary or praise.

A striking feature of the current volume, in contrast to its predecessor, is the allotment of less space to the actual methodology and analysis and inclusion, instead, of a section of five chapters of more general discussion comparing the male and female in regard to the Anatomy of Sexual Response and Orgasm, the physiology of Sexual Response and Orgasm, Psychologic Factors in Sexual Response, Neural Mechanisms of Sexual Response, and Hormonal Factors in Sexual Response. This basic material is in part compiled from the scientific literature, and in part represents important, original observations on the nature of erotic physical response and the role of the total nervous system—central, peripheral, and automatic—in sexual stimulation and orgasm. Many of these findings are indeed essential to the authors' interpretations of the data analyzed in the earlier part of the book. Yet, from the mode of presentation, it is difficult to distinguish the original material from the secondhand. In fact, these approximately 200 pages might easily be supposed to have been added merely to make the book more useful, instructive, and interesting to 100,000 prospective non-scientific readers, although, in that case, surely they resemble too greatly the average college textbook to achieve their aim. There is, consequently, a grave suspicion that the authors have fallen between two stools. With one eye on the clamoring public, they have curtailed the analysis of their data to an unfortunate degree and deviated from the simplest and most logical plan of organization. With the other eye directed toward their fellow-scientists, they have included tables, graphs, and text that make the book, in literary style and character, a volume for the serious student and by no means for the casual fancier of the subject.

The foregoing criticism of the treatment of the data needs to be explained more fully. The sample obtained

in the study of sexual behavior in the male was a "stratified sample," that is, one in which the attempt was made to secure an adequate sample from each of the categories and subcategories into which the population appeared to be divided on the basis of race, marital status, age of adolescence, current age, educational level, occupational class of the subject, occupational class of parents, religious group, degree of religious adherence, and rural or urban background. From such a sample, if the proportions of the groups in the total population are known, the behavior of the total population can be reconstructed by properly weighting the several categories. But the total sample as such tells nothing about any universe except itself. It must be analyzed in terms of its separate groups.

Now in the study of sexual behavior in the female, on account of practical difficulties, the effort to obtain an adequate stratified sample was abandoned. The authors (p. 36) regard the sample as inadequate at many points, especially for age groups over 50, for educational levels 0-8 (grade school) and 9-12 (high school), for previously married females, for all Catholic groups and for devout Jewish persons, for laboring groups, rural groups, and individuals born before 1900. Geographically, the U.S. Southeast, Pacific Northwest, and Plains and Mountain States are poorly represented. Quite properly, therefore, the authors have refrained from any attempt to reconstruct the sexual behavior of the entire U.S. white female population. Nevertheless, throughout the book, the analysis devotes much attention to the *total* sample, without exclusion of individuals who represent the inadequately sampled groups. This total sample consequently represents nothing except itself. It possibly reflects quite accurately the behavior of females in particular groups, for example, Protestant college women aged 20 to 60. The analysis, however, is not made primarily in the form of a series of comparisons between adequately sampled groups. It is in fact difficult, if not impossible, from the form of the presentation to determine what proportions of the total sample come from the adequately sampled groups; and the misplaced emphasis upon the total sample in chapter after chapter is likely to mislead readers seriously and to encourage overgeneralization. At the very least, in presenting the data, the total sample might have been separated into two parts: information derived from adequately sampled groups, and that derived from all other groups. In a study that is otherwise so valuable, this is a serious defect.

A second major criticism may be directed at the intermingling of objective reporting of data, on the one hand, and subjective opinions of the authors, on the other. No one ought to object to the statement of opinions on the subject of sexual behavior—its normal forms, its legal aspects, its diversity and relation to religious origins and prohibitions—by those who have acquired so extensive a knowledge of present sexual practice in America. Yet scientists might expect that conclusions drawn directly from reported behavior—for example, regarding the frequency in certain groups of certain types of behavior—would be clearly separated from opinions regarding what is right or wrong, what is desirable or undesirable, what is historically traceable to one influence or another. Kinsey's study of sex behavior started out to be a biologist's analysis of actual practice, based on personal reports. In spite of precautions, it often seems to culminate in propaganda for certain sociological views: that what is common in sexual behavior must be right; that the Judaeo-

Christian culture imposes undesirable restraints upon normal and natural sex activities; that inhibition of sexual outlet, in some form or other, is biologically as well as psychologically unhealthy and unwise; or that certain laws ought to be changed. To some extent, this is the consequence of the fairly widespread, earlier criticism by psychiatrists and sociologists that Kinsey's group had not paid sufficient attention to the diverse aspects of sexual behavior and the social values involved. As a result, the staff was considerably expanded, to include, among others, two research associates in legal studies and consulting editors in psychiatry, psychology and neurophysiology, sociology as well as statistics. Yet no matter how fully we may agree with these points of view, scientists are surely justified in expecting that the objective findings of the study will be kept distinct from a consideration of ethical and sociological implications. True, the subjective opinions are in the main gathered into sections clearly labeled: "Significance of . . . Moral Interpretations; Legal Implications; Social Significance . . ." and so forth. But these sections might far better have been separated altogether from those chapters in which the actual data are analyzed and discussed. A part of the failure of this book to achieve the widest possible acceptance by all serious students of sexual problems may then be fairly attributed to this indistinctness between scientific and social conclusions. Yet in all fairness, this is in large part not so much a matter of what the authors have said or how they have said it, but rather of the organization of the book as a whole.

To conclude, the authors would on several grounds have achieved their divided purposes better had they written two distinct books: one, an even more exhaustive and critical analysis of the reported data; and second, a truly popular treatment of the subject embodying a summary such as that which appeared in *Life Magazine*, a general discussion of comparative sexual behavior in the male and female, and a consideration of the ethical and sociological implications of the study.

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*Glycols*. American Chemical Society Monograph 114. George O. Curme, Jr., Ed., and Franklin Johnston, Assoc. Ed. Reinhold, New York, 1952. 389 pp. \$12.

This monograph deals with the production, physical properties, applications, condensation polymers, physiological aspects, analysis, and testing of the various glycols that are now in commercial production or have been or could be so produced. The authors of the various chapters, which are clearly and concisely written, are members of the Carbide and Carbon Chemicals Company staff.

The content leans rather heavily toward the technical aspect and, perhaps, one of the more important contributions of the book is the excellent coverage and presentation of data that are buried in the patent literature. Thereby, one of the principal purposes of the monograph, "to make available to chemists a thorough treatment of a selected area," has been fully achieved. However, this publication lacks somewhat in fulfilling its second purpose, "to stimulate further