

the L forms of certain bacteria represent a gonidial phase and are not symbionts, as prolonged and careful study had indicated.

Any suggestion for simplifying the classification of bacteria is likely to prove attractive; how far this is possible along the proposed lines of structure and life-history would seem to depend on the regularity of these strictly morphological criteria, and limits of variation might well require more exact definition than is at present possible. In conclusion, Dr. Bisset makes a plea for correlating genetical with cytological studies, and claims that such genetic evidence as there is supports his own findings and their interpretation. The main thesis, that bacteria possess essentially the same complexity of structure and function as other cells, is carefully elaborated in the text and is beautifully illustrated by many line drawings and striking photographs.

C. F. BARWELL

## FERTILITY AND STERILITY IN MAN

### Human Fertility and Problems of the Male

By Dr. Edmond J. Farris. Pp. xvi+211+10 plates. (White Plains, N.Y.: The Author's Press, Inc., 1950.) n.p.

THE author, who is an executive director of the Wistar Institute of Anatomy and Biology in Philadelphia, designed this book for the use of physicians and scientifically minded laymen alike. The material, however, has been derived almost exclusively from the author's own researches, and consequently the reader should not expect to find in the book either general information or an appreciation of the whole problem of human sterility in all its manifold aspects. He will be confronted instead with an account of studies carried out by the author and his associates during the past decade, chiefly on the causes and alleviation of sterility in the human male.

In agreement with other workers in this field, the author comes to the serious conclusion that a large percentage of husbands in America suffer from various degrees of subfertility which in many, though by no means in all cases, is associated with abnormal composition of semen as assessed by microscopic examination of spermatozoa. The principles underlying the microscopic analysis of semen constitute the major theme of the book, and the author emphasizes particularly the point that an estimate of the total number of *motile* spermatozoa in an ejaculate offers a much better criterion of semen quality than a simple determination of sperm density, that is, the number of sperm, regardless of their motility, per ml. semen. It is reassuring to know that this principle is being applied by the author to the numerous cases which come under his observation. In Great Britain the principle of 'percentage motility' and 'degree of motility' has long been recognized as indispensable in the veterinary practice of semen analysis, and, thanks to the studies of Clare Harvey and Margaret Jackson, it is now applied in the examination of human semen as a routine.

On the point of preserving human sperm at low temperature, the author's experience has been rather discouraging; but then his methods vary considerably from those recommended by Parkes and others as absolutely essential for the survival of vitrified human spermatozoa. There is no mention in the book of either the biochemical or the physicochemical

aspects of human semen. However, one has to bear in mind that the modern chemical and physical methods of semen analysis are relatively new and based upon the use of animal semen. It is very much to be hoped that the next decade will offer ample opportunity to the clinical investigator to apply to human semen some at least of the modern methods developed by research workers in the more advanced and wider field of fertility and sterility in animals.

T. MANN

## HEALTH EDUCATION AND THE ADOLESCENT

### Fundamentals of Health and Safety

By Grover W. Mueller and Dr. Elizabeth Chant Robertson. Pp. ix+345. (New York: D. Van Nostrand Co., Inc.; London: Macmillan and Co., Ltd., 1948.) 14s. net.

THIS is an excellent book, the purpose of which is to give the adolescent a broad understanding of how his body is made and how it works, what forces are acting upon him, how to get on with other people, what the community is doing to promote health and prevent disease, and what he himself must do to promote his own health and to avoid endangering the health of others. The theme throughout is that the health of the adolescent is mainly his own responsibility. The reader is addressed personally and is encouraged to seek in his own body the illustrations of what is said.

The lessons to be learned about how to care for oneself and others emerge naturally in each section, and therefore become not a set of arbitrary rules but the logical outcome of what we know about the mind and body and their health. In relevant places the book includes instruction in elementary first-aid and gives simple corrective exercises for minor defects of posture. Its approach is positive, and it encourages the reader to make the most of his own physique and personality. At the end of each chapter the reader's participation is invited by the posing of straightforward questions and of questions for which alternative right and wrong answers are given, and by a list of things that the reader is asked to do. A number of tests—for example, a weekly diet score test—are set at different points in the book.

On the whole, this book serves its purpose admirably. It is simply and lucidly written, and, although there is inevitably some over-simplification, it is basically sound and full of common sense. It is obviously admirable as a text-book for American high-school children, and would be useful as a teaching brief for teachers of secondary-school children in Great Britain. The section dealing with accidents is particularly good, and in the chapter entitled "Ourselves and Others" there is valuable teaching on human relations by the use of stories about the experiences of other young people.

The only serious weakness is that the sections dealing with human reproduction and sex relations are too short and too superficial. Adolescents are entitled to expect, and should find, more detailed and helpful information on these subjects in a book that is specifically addressed to them. Nevertheless the book does admirably what it sets out to do, namely, to give the adolescent a broad grasp of the fundamentals of health and safety.

ROBERT SUTHERLAND