

Book Reviews

CYTOLOGY AND CELL PHYSIOLOGY. Edited by Geoffrey Bourne. Clarendon Press, Oxford. XII + 296 pages.

In the Preface the Editor states that this volume represents an attempt to bring together chemical, physico-chemical, and morphological aspects of the study of cells, and this has been carried out by selecting a number of subjects which are representative of different fields of the study of cells and which relate, as far as possible, one to the other. The subjects of the various chapters together with their authors are as follows: Technique for the Study of Cell Structures, by J. R. Baker; General Methods for the Physical and Physicochemical Study of Cells, by J. F. Danielli; The Monolayer Technique, by J. H. Schulman; Cell Membranes, by J. F. Danielli; Mitochondria and Golgi Apparatus, by G. Bourne; Nucleus, Chromosomes, and Genes, by M. J. D. White; Micro-Incineration, by E. S. Horning; Enzyme Systems, by H. Blaschko and W. Jacobson; and Pathological Cytology, by R. J. Ludford.

Since the central problem of cancer research is the investigation of the aberration of cellular functioning which determines malignancy, the topics discussed may be of general interest to cancer workers. Malignant cells are specifically discussed in two of the chapters. E. S. Horning describes the present state of our knowledge concerning their inorganic constituents and R. J. Ludford contributes a brief review of their general cytological characteristics.

R. J. LUDFORD

BLOOD GROUPING TECHNIC. By F. Schiff and W. C. Boyd. Interscience Publishers, Inc., New York. 1942. 248 pages. Price \$5.00.

This useful manual by the late Dr. Schiff and by Dr. Boyd gives in concise and readily understandable form the useful aspects of blood grouping. There is a succinct but satisfactory account of the various blood grouping methods, with a discussion of the M and N types. The material on the Rh factor is quite adequate. Of use to those interested is the section on blood transfusion, including as it does a description of the means of investigating transfusion accidents. The New York City regulations regarding blood donors and blood banks are given in full, as amended in 1939. A useful item for a second edition of the book would be the O.C.D. blood bank procedures.

An adequate section on the forensic aspects of blood grouping, with a discussion of disputed paternity, is given. There is also a description of the forensic application of blood grouping, including the study of blood stains.

In addition, a useful chapter is that on antigens similar to those of blood groups found in animals. A final section on the anthropological applications of blood grouping is clearly presented.

The reviewer feels that this book can be highly recommended to those who already have some fundamental knowledge of the problems involved in blood grouping and blood bank management.

SHIELDS WARREN

LE PROBLEME DU CANCER. By Charles Oberling. Collection "France Forever." L'Arbre, Montreal. 1942. 300 pages. Price \$1.50.

The geneticist moves among his animals as though endowed with a spark of divine power, for he can determine the course of their lives even before they are born. He shows us strains bred for longevity, since by judicious matings over many generations he has eliminated all those weaknesses upon which disease could lay hold, and so can guarantee a life span of more than ordinary length. Then he shows us other strains that are resistant to cancer, and finally still others in which the disease will appear in all the members, at a certain fixed time and as inevitably as puberty or the menopause.

This abridged translation of one of the opening paragraphs in the section on heredity furnishes an example of the easy and entertaining style in which Oberling's book is written.

Avowedly for the layman, it can but sketch the general course of cancer research, and the specialist will therefore pass rapidly through the pages on theory, on transplanted tumors, and on the experimental induction of neoplasms, for their contents will be thoroughly familiar to him.

He may be tempted to pause, however, over some unusually felicitous passage such as the discussion of the role played by irritation in etiology. Infatuation with it has led to what might be called the hypnosis of positive cases, and to the total neglect of innumerable negative ones. Cancer is so relatively rare that it must be the outcome of an extraordinary coincidence of favorable circumstances, thus resembling somewhat the winning number in a lottery, and the irritation hypothesis accordingly becomes the hypothesis of chance.

That such diverse compounds as the carcinogenic hydrocarbons and aromatic amines, hormones, hydrochloric acid, sugar, and salts of zinc should elicit malignant growth may be explained by the supposition that they modify the tissues in such a way as to permit the intervention of an unrecognized carcinogen already present there. Certainly they do not achieve their effect by irritation alone.

From here the argument passes logically to a discussion on virus etiology, much the most interesting part of the book to students of cancer, for whether or not they are able to accept such an explanation they will admit that the evidence for and against this vexed question is presented fully, fairly, and entertainingly.

A long road has been traversed, says Oberling, since Borrel first suggested the virus hypothesis. Though the evidence available at that time was flimsy in the extreme, subsequent investigations have disclosed leukemias and benign and malignant growths due to virus infection, and the discovery of a papilloma of the rabbit and an adenocarcinoma of the frog kidney, both caused by viruses, has finally broken down the barrier arbitrarily erected between the tumors of birds and those of other species. Furthermore, and this is highly significant, it has been shown that a neoplasm may be caused by a virus and yet resist all attempts at its recovery. Thus it is no longer justifiable to deny the presence of virus in a tumor that cannot be transmitted by cell-free filtrates made according to current methods.

One characteristic of the viruses in particular is of the