

BOOK REVIEWS

LUDWIK GROSS. **Oncogenic Viruses**. Pergamon Press, 393 pp. 80s.

It is nearly 60 years ago since Ellerman showed that a leukaemia-like condition in the fowl could be transmitted by a cell-free extract. Investigation of this aspect of cancer received a further stimulus when in 1911 Peyton Rous succeeded in demonstrating that a truly malignant sarcoma in the fowl also could be transmitted by filtrate obtained from the tumour. A great amount of experimental work subsequently clarified the nature of this sub-cellular agent which became known as the Rouse sarcoma virus. During the past decade interest in tumour viruses has greatly increased as with new methods and techniques—the use of new-born animals, tissue culture and electron microscopy—more virus or virus-like “oncogenic” agents have been discovered. A survey of the advances made in this field of cancer research is the aim of the book under review.

The author of “Oncogenic Viruses” is well acquainted with his subject, being one of the pioneers who demonstrated the transmission of mouse leukaemia by a cell-free filtrate. The book contains much interesting information concerning the historical events which led to the discovery of the various tumour producing “viruses”. The reader will learn about the Shope virus in rabbits, Rous’ agent in the fowl, the viral basis of fowl-leukosis and the mammary cancer inducing “extra-chromosomal” factor of Bittner. The author gives a good account of electron microscopic studies of the Rous sarcoma and of the milk agent in the mouse. The largest part of the book is however devoted to mouse leukaemia, the author’s own field of study.

The occurrence of spontaneous leukaemia in certain strains of mice is described and various factors such as sex, age, gonadectomy, and thymectomy which influence its development are discussed in detail. The information given in Chapter 7 is of special interest, concerning as it does the search for the leukaemia “agent” in mice, and the early attempts to transmit mouse leukaemia by cell-free extracts. Another chapter deals with the nature and behaviour of leukaemia induced in mice by irradiation. We learn that a filterable agent is also present in the radiation induced leukaemias. In Chapter 9 the author describes those “oncogenic viruses” which were discovered by Graffi, Friend and Molony, and in Chapter 10 deals with the versatile polyoma virus, which can induce multiple tumours in mice, rats and hamsters. The last chapter contains a brief account of the efforts to disclose the existence of oncogenic virus in man.

The book is a valuable source of information. Beside the virus field, the author has gathered together information about the origin of various inbred strains of mice and several of the transplantable tumours so much used in cancer research. The numerous, well reproduced photographs of those engaged in the study of oncogenic viruses will be appreciated by many readers. A serious short-coming of the book is the lack of tables, only two are included. Much of the quantitative data referred to by the author could have been presented in a more easily assimilable manner. Perhaps this is one of the reasons why the reader is not infrequently confronted with repetitions and cross references in footnotes. The references are abundant, up-to-date and given after each chapter. In the reviewer’s opinion the book is a significant contribution to cancer literature.

P. C. KOLLER

CH. WUNDERLY: **Principles and applications of paper electrophoresis**. Elsevier Monographs, 1961, pp. ix+253. 26s. (Received 10 October 1961.)

IN THIS volume of the Elsevier series of chemical monographs, Dr. Wunderly reviews the development of the separation of biological compounds by paper electrophoresis from the early observation of König, up to its present assured place in biochemical analysis.

The emphasis is on experimental detail, although a pleasing feature is the clear exposition of the theoretical background which will answer many of the questions arising during its use. The author has gathered together the many variations in technique which have appeared over the last 10 years e.g. continuous preparative electrophoresis, use of high voltage, etc., all of which are described in detail, with the additional information of the firms supplying the apparatus and auxiliary equipment.

The requirement for only small amounts of material and ease of detecting separated proteins by staining to form a pattern, has resulted in its widespread use for following protein changes in disease, and a great part of the book is devoted to this study. The protein patterns obtained from the body fluids of both man and animals under normal and pathological conditions are examined, and attention drawn to the complexity of the fractions in relation to obtaining a quantitative assessment by staining and colorimetry, and the clinical interpretation.

The separations of the associated lipoproteins and glycoproteins are also discussed, with mention of other procedures for characterizing the fractions, e.g. ultracentrifugation and chemical analysis. A valuable suggestion based on the work of the author is the parallel separation of these blood constituents and their combination with serological tests to give greater sensitivity for clinical diagnosis.

The versatility of the method is illustrated by its extension to other biological compounds, e.g. amino acids, steroids, labelled proteins, etc.

In all, this review is well documented (1721 references), well produced in a paperback edition and is a valuable addition to laboratory manuals.

L. D. G. HAMILTON