recovery had been given up. Several very impressive cures were obtained with malignant as well as benign tumors. A major problem in the destruction of the tumors is the overloading of the excretory system with toxic decomposition products that may cause death by poisoning. Also, the destruction and resolving of stomach and intestinal tumors may cause perforations. It is of interest that strongly irradiated tissue is resolved in the same manner as tumor tissue.

The general importance of these systems and of their magnitude and rate of change is further demonstrated by cures of dermatoses, such as lupus vulgaris, skin tuberculosis, and psoriasis in human beings, and Walker carcinoma in rats. Reference is made to the cooperative work on dermatoses with the late Dr. Bering. The scope of the book may be gaged from the following Table of Contents:

I. *Introduction* (22 pages): "The blood systems," "Blood lipid and blood sugar," "The cholesterol-phosphatide system," "The cholesterol-sugar-phosphatide system"
II. *The Pathology of Blood Reactions* (7 pages)
III. *Blood Reactions and Proliferative Phenomena* (52 pages): "Hormones," "Proteins-glucose-salt solutions," "Additional supply of phosphatides and glucose," "Solutions of salt mixtures," "Summary"
IV. *System Reactions and Proliferative Phenomena* (15 pages)
V. *Destruction of Tumors* (34 pages)
VI. *The Significance of the Relationship between Blood Sugar and Cholesterol Esters* (13 pages)
VII. *The Time Factor* (5 pages)
VIII. *Benign Tumors and Dermatoses* (16 pages): "Dermatoses," "The Walker carcinoma"
IX. *Theoretical Basis and Methodology of a Therapy* (9 pages)
X. *Blood Reactions and Tumors* (25 pages)

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The Cultivation of Animal and Plant Cells. Philip R. White. Ronald Press, New York, 1954. xi + 239 pp. Illus. $6.

Very few persons have had the necessary experience in the cultivation of both animal and plant cells to be able to write a book like this one. One's first reaction to the title might be to question how many readers would be broad enough in their interests to appreciate a book encompassing both of these fields. However, the author has interwoven the plant and animal material so skillfully that upon reading the book it seems quite natural to consider them as two facets of the same fundamental problem. The reader whose own work is concerned with animal cells is not likely to skip over the passages on plants, but he may very well read these passages with even more interest and profit than those sections dealing with material more familiar to him.

At the outset, a short chapter focuses attention on the primary importance of the cell as the basic physiological unit that must be understood before one can study effectively the complex integrated systems of the units that comprise the organism as a whole. This is followed by an excellent historical account of the development of cell culture, illustrated with portraits of 12 of the leading contributors to the field. Succeeding chapters are concerned with the living material for cell cultures, the laboratory and its equipment, nutrients, and the various types of cultures. One chapter is devoted to a detailed and lucid exposition of the procedures for isolating a tissue and setting up cultures. This exposition is amplified by convenient lists of the materials required, and it is illustrated by several helpful diagrams. The two final chapters deal with methods for the measurement of growth and the applications of cell culture.

Many persons have been discouraged from undertaking cell culture because of the widespread belief that it involves complex techniques and elaborate, expensive equipment. One of White's stated objectives is to dispel this misapprehension and to encourage the belief that the principles and methods of cell cultivation are relatively simple and that much of the equipment required is already at hand in most modern laboratories. In this worthy objective he succeeds very well. A novel and valuable feature of the book is its appendix, entitled "Simple techniques for beginners," which presents a number of exercises suitable for class use in a course in cell culture or even in an undergraduate course in biology.

This admirably organized, well-written book will be welcomed by novices in the field of cell culture and by teachers, as well as by established investigators.

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Communication Theory. Papers read at a symposium on application of communication theory held at the Institution of Electrical Engineers, London, 22–26 Sept. 1952. Willis Jackson, Ed. Academic Press, New York; Butterworths, London, 1953. 532 pp. Illus. $11.

Modern developments in communication theory are proliferating at a prodigious rate, and although they have not brought about the major revolutions envisioned a few years back by some of their more enthusiastic adherents, there is no doubt that they are significant and that they will permeate many fields and be useful, both practically and theoretically. The present volume is a collection of 38 papers read at a symposium on communication theory in London in Sept. 1952. They exemplify both the impact on the communication field and the fructifying effects in other fields resulting from the new developments.

The first 25 papers (360 pp.) comprise a summary of communication theory, a group of nine papers on transmission systems and coding, eight grouped around the general theme of discrimination of signals in the presence of noise, four on divers characteristics of transmission channels, and three on applications to television. The rest range over many fields; one deals