publication is a link that can provide a common basis for the interchange of ideas.

Because of the key role played by such a book, it is important that the contributors devote considerable effort to present their material in a stimulating as well as informative manner. It is not enough to write a running commentary on a series of bibliography file cards. Outstanding examples of good review writing are to be found in chapters on "Nitrogen metabolism" (G. Webster), "Functional aspects in mineral nutrition of green plants" (A. Pirson), and "Chemical nature of disease resistance in plants" (J. C. Walker and M. A. Stahmann). These authors have the ability to weave a presentation of the latest material into the patterns of previous knowledge. Furthermore, they are able to point out the broad as well as specific areas where future research is needed.

The other articles, all of high caliber, but lacking the sparkle that would make them outstanding, concern the following topics: mineral nutrition, photosynthesis, growth regulators, flowering, abscission, ater relationships, flower colors, cotton physiology, pathogenicity, alkaloids, and tissue culture.

It seems unfortunate that H. Lundegårdh in his review on "Mechanisms of absorption, transport, accumulation, and secretion of ions" took this opportunity to present, essentially, a defense of his own theories with references made only to those works that tend to support him. The omission of the important researches of Epstein and others gives evidence of this reluctance to present a balanced view of this subject.

D. I. Arnon is to be commended for his efforts as editor for the past 6 years. It is hoped that L. R. Blinks, as the new editor, will continue to make *Annual Reviews of Plant Physiology* not only an essential encyclopedic reference source, but a dynamic and stimulating publication to be enjoyed by all plant scientists.

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Polarographic Techniques. Louis Meites. Interscience, New York–London, 1955. xiii + 317 pp. Illus. $6.

In writing a manual to guide the student who is being introduced to the science of polarography, Meites has contributed an easily read and well-organized textbook.

A short introductory chapter on the nature and scope of polarographic measurements is followed by a description of present-day instrumentation. The polarographic limiting current is the subject of the third and longest chapter (43 pages), which contains a discussion of the residual, migration, and diffusion currents followed by a description of the kinetic, catalytic, and adsorptive phenomena that complicate the interpretation of the magnitude of the limiting current. Eight experiments at the end of the chapter are included to illustrate the main points developed. In all, 28 such experiments are included in the book. After mastering the first three chapters and Chapter 6 on maximum suppressors, the student should be ready to proceed to the interpretation of current-voltage curves (Chapters 4 and 5), quantitative analyses (Chapter 7), amperometric titrations (Chapter 8), and the more specialized techniques of polarography (Chapter 9). One hundred and twenty-six well-chosen references are inserted to encourage the interest of the student in further study and research.

The limited usefulness of the appendix on trouble-shooting in polarographic circuits is more than over-balanced by the usefulness of the extensive table of half-wave potentials and diffusion-current constants of inorganic substances that is compiled in the second appendix.

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Histologische Geschwulstdiagnostik. Systematische Morphologie der menschlichen Geschwulste als Grundlage für die klinische Beurteilung. A. V. Albertini. Thieme, Stuttgart, 1955. xvi + 544 pp. Illus. $23.40.

The book of the prominent Swiss pathologist A. V. Albertini deals with the micromorphology of benign, malignant, and borderline tumors, discusses interpretations of histological structures and prognostic evaluation, and contains remarks on relative frequency, age, and sex.

The author covers systematically and completely *all* kinds of tumors of the respiratory, digestive, and urinary organs; the female genitals; the breast; the male genitals; the thyroid and parathyroids; the adrenals; the sympathetic nervous system; the heart and blood vessels; tendons and bursae; spleen and lymph nodes, bones and skin. Neoplasia of each organ is grouped according to histogenesis and cell and tissue differentiation. The scheme, well executed, permits a quick and easy orientation. Some exceptions are made either because of difficulties in classification or for reasons of tradition (for example, Ewing sarcoma and Brenner tumor).

More flexible than other conservative pathologists, the author acknowledges the usefulness of cytological tumor diagnosis and recognizes the superiority of Papanicolaou's method over other methods. Albertini is not enthusiastic about the prognostic evaluation of tumors by grading slides according to cell activity, differentiation, and mitotic index. He views this method as pseudoexact and gives preference to Walther's formula, which empirically accounts for three variables: growth by expansion, lymphatic spread, and hematogenous dissemination. However, this procedure also has shortcomings.

Albertini thinks that the cytoplasm of cancer cells gets too little attention and advocates examination of fresh unstained tumor samples by means of Zernike's phase-contrast method. This method reveals important regressive changes, otherwise missed, within the cytoplasm and in the cell membrane (in highly dedifferentiated tumors).

In each chapter the author gives an account of unsettled problems of classification. Differences of opinion occur at the delineation of precancerous conditions from cancer, as, for instance, in Hinselmann's stages III and IV of cervix pathology. Stressing histological more than cytological features, Albertini includes preinvasive carcinoma (surface carcinoma, carcinoma *in situ*, or "carcinoid") in the group of precancers. Thus, Bowen's disease is a precancer as long—and this means many years—as the numerical equilibrium between proliferation of the *cancerous* cells and their disintegration has not been shaken.

Time and again the author points out difficulties arising from disagreement between histology of a tumor—appearance as a benign tumor or a granuloma—and its malignant clinical course—for example, in Kaposi's angiosarcoma, and vice versa. Thus, he classifies skin epithelioma, because of its clinical course, as a precancerous condition, despite its histology. He also discusses histological divergencies between primary epithelial tumors and seemingly sarcomatous metastases (epithelioma fusocellulare).

Albertini still excludes leukemia from the family of tumors, and since some lymphocytic lymphosarcomas (of the mediastinum) turn into leukemia, he considers those a localized form of leukemia and not members of the sarcoma group. In view of the prevailing opinion regarding leukemia, this complex deserved a more thorough discussion than a paragraph in the subchapter on *benign* lymph-node tumors.

No place was reserved for tumors of the central nervous system, the eye, and the ear. I doubt whether Cushing and Bailey's work is a valid reason for excluding them from a comprehensive book on histopathology of tumors. Omission of these tumors is the more deplorable because, in recent years, much attention has been paid to childhood cancer. I also