is that one of the principal adaptive values of diapause is its function in synchronizing adult emergence, a consequence of obvious significance for species with a short adult life.

In addition to its other virtues, the book makes accessible a large number of important findings published in Russian and Japanese. Indeed, almost 15 percent of the 285 references are to papers published in these two languages. The book is thoughtfully written and merits the attention of experimental biologists in general.

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Aspects of Synthesis and Order in Growth. Dorothea Rudnick, Ed. Princeton University Press, Princeton, N.J., 1954. vii + 274 pp. Illus. + plates. $6.

The aspects of synthesis and order in growth presented in this volume are those that were discussed at the 13th symposium of the Society for the Study of Development and Growth at Dartmouth College in June 1954. The 11 contributors have investigated a wide variety of growing things, from microorganisms to vertebrates, and have concerned themselves with the orderly control of many different types of developing systems.

Two papers deal with physicochemical considerations of energetics and molecular topology in the synthesis of proteins: Linus Pauling speaks for a two-step template process, and J. S. Fruton presents an alternative hypothesis. Molecular events are also the primary concern of two other papers dealing with the modification of metabolic pathways in microorganisms.

R. Y. Stanier discusses sequential induction of enzyme systems by substrate modification, and S. S. Cohen writes of unbalanced growth resulting from virus infection. These papers illustrate the fact that investigations of bacterial physiology may contribute not only to concepts of the control of growth but also to concepts of changing metabolic patterns that may be relevant to problems of induction and differentiation in multicellular organisms.

There are two contributions from plant studies. S. B. Hendricks and H. A. Borthwick discuss the synthesis of pigment systems in control of photo-responsive growth, while R. Emerson deals with substances controlling gametophytism versus sporophytism and sex differentiation in water molds.

Two papers concern chick embryos. J. Ebert deals with the topological localization of protein synthesis in the early blastoderm, especially correlating the appearance of actin and myosin, detected immunobiologically, with morphological data in differentiating heart tissue. N. T. Spratt, Jr., reviews the physiological peculiarities of the organizer center in the chick primitive streak, as revealed by its nutritional requirements when explanted, and compares the node center with the shoot apex.

E. S. Russel reports on the physiological consequences of gene products in the mouse, where the W-series alleles, in chemically specific ways, influence blood formation, gonad development, and coat pigmentation. C. Grobstein is concerned with the synthesis and movement of molecules involved in the induction of mouse salivary and kidney tubule structures. The interacting tissues combined *in vitro* and separated by filters give results supporting the matrix concept in differentiation.

In the final paper, D. Bodenstein discusses the hormonal basis of control over molting patterns in larval and metamorphosing insects. Thus this collection of papers represents approaches to basic problems of growth and development ranging from purely chemical to purely biological considerations. The Princeton University Press has continued the attractive format established 2 years ago when the 11th growth symposium was the first to be published in book form. Although this volume has a 1955 copyright, the title page bears the misleading date, 1954.

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The Science in Action TV Library. vol. I. Benjamin Draper, Ed. Merlin, New York, 1956. 157 pp. Illus. $3.50.

For several years the television program *Science in Action* produced by the California Academy of Sciences has been notably successful on the West Coast. In this book six scripts of the program are presented complete with dialog, camera directions, property lists, and sketches of the layout of the"playing area." The use of the "third camera technic" for effective close-up views is described, and numerous photographs help the reader to understand the way models, diagrams, and working apparatus are used. The program has a standard pattern with Earl S. Herald of the academy as host and a guest scientist who carries on a conversation with Herald as the two move from one part of the playing area to another.

This account probably gives as good a behind-the-scenes view of a scientific television show as could be obtained by any means short of attendance at the conference between writer and guest scientist, the trial rehearsal, the camera rehearsal, and the live program. This book should have value to anyone who is interested in the dignified yet lively presentation of science to the public by way of television or, with slight modifications, by means of movies—G. DuS.

Corn and Corn Improvement. Agronomy Monograph, vol. 5. George F. Sprague, Ed. Academic, New York, 1955. xiv + 699 pp. Illus. $11.50.

This book, as the title implies, is intended to be a comprehensive treatise on the corn plant—its botanical characteristics, climatic requirements, nutritional value—and on its improvement through breeding, cultural practices, and the control of insects and diseases. The book contains 16 chapters, written by 14 authors, all recognized specialists in their respective fields. Since all but two of the authors are stationed in the U.S. corn belt, the book is naturally concerned largely with the corn plant and practices associated with it in terms of corn-belt experience. Only slight attention is given to corn in other parts of the United States where it is an important, although not the major, crop, or in other countries of this hemisphere where it is the basic food plant.

For the corn belt, which is the world's foremost corn-growing region, the treatment is comprehensive and competent. The literature has been thoroughly reviewed, although there are a few curious omissions, and has, with a few exceptions, been objectively presented. The interesting and lively chapter on "History and origin of corn" by Weatherwax and Randolph is marred by several omissions, contradictions, and errors of fact or statement. The otherwise excellent chapter on "Corn breeding" by Sprague inexplicably treats the important contribution of D. F. Jones to modern corn-breeding with a single vague sentence, while devoting pages to technical details involved in the use of Jones' method.

The different chapters vary greatly in length, organization, and technical and literary quality. All are authoritative, but not all are interestingly written. Some chapters are excellent and one, "The cytogenetics of maize" by Rhoades, is distinguished. The general average is good.

Because of the vast amount of material that it contains, and because it represents the most complete summary yet published on the subject, this book will be indispensable as a reference work to anyone having a professional interest in America's most important crop plant.

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