ters on community factors and resources in the education of the gifted and on the gifted child in the family.

As has already been implied, the consideration is of youngsters in the elementary and secondary schools rather than students in college, although integration of the work of secondary school and college is touched on. There is much illustrative material, there are appendixes listing tests useful in locating superior children and organizations interested in them, and there is a classified annotated bibliography.

To me it seems unfortunate that there is no mention of Lehman's monumental work on age of achievement and of his finding that best creative work tends to be done early in the young adult years. In view of the increasingly long preparation now required in scientific and other fields, that finding adds urgency to efforts to facilitate the progress of able young people into careers. But, in total, the volume is exceptionally broad in treatment, in the sources on which it draws, and in the variety and practical nature of the suggestions of ways in which schools may find and foster the talents of the gifted.

S. L. PRESSEY

Ohio State University

Plant Virus Serology. R. E. F. Matthews. Cambridge University Press, New York, 1957. xi + 128 pp. Illus. $5.

This excellent little volume is a manual of laboratory methods in plant virology. Aside from the condensed account in Bawden's general textbook, it seems in fact to be the only existing description of plant virus serology.

There are 11 chapters: "Introduction," "Types of serological test," "Routine testing for virus infection," "Serological tests for determining relationships among plant viruses," "The precipitin reaction," "The antibody content of sera," "Methods of estimating virus concentration," "The cross absorption procedure," "Precipitation in mixed systems," and "The applicability of serological techniques." The first chapter is a general introduction and assumes no knowledge of serology on the part of the reader. The nature of subsequent chapters is well indicated by their titles. To avoid any possible misunderstanding, however, it may be remarked that the antibodies used are animal (rabbit) antibodies.

In addition to the quantitative nitrogen methods introduced into serology by Heidelberger and Kendall, the author makes much use of quantitative timing of the precipitin reaction, including the optimal proportions method introduced by Dean and Webb and modifications of this method suggested by Hooker and Boyd, and by Boyd, little used in this country. The author's interpretation of the beta optimum is somewhat different from that of the latter authors but not necessarily incorrect. These relatively little known methods, plus a serological chromatographic method attributable to Matthews, are evidently of great value, especially for estimating small amounts of virus.

The book is well illustrated by six plates and 12 text figures. There are a bibliography of more than 100 titles, a subject index, and an author index.

WILLIAM C. BOYD

Boston University

Development of Vertebrates. Emil Witschi. Saunders, Philadelphia, Pa., 1956. xvi + 588 pp. Illus. $8.50.

This textbook of embryology is based on a new and original plan, incorporating a considerable amount of material on experimental embryology, developmental physiology (especially metabolism), and the endocrinology of reproduction. Such a plan results in a far more complete and well-rounded elucidation of developmental processes than was possible in the older textbooks based on a strictly morphological approach. The author's research experience in the fields of experimental embryology and endocrinology has, of course, eminently qualified him to prepare this new type of presentation. The clarity of the writing and the excellence of the illustrations make the book a pleasure to read, and these features will be appreciated by the college students who will use it. Since students majoring in zoology or in premedical work (for whom the book is intended) may eventually enter fields of biological or medical research, rather than medical practice, this approach provides a valuable stimulus to the coming generation of research workers in the biological sciences.

A great deal of material is covered in the 588 pages; basic concepts are outlined (10 pages), and there are general sections on maturation of the gametes (33 pages), fertilization (11 pages), and cleavage and gastrulation (13 pages) as well as longer and more specialized sections on the development of fishes (24 pages), amphibians (118 pages), birds (146 pages), and mammals, including man (179 pages). Experimental material is incorporated in the sections on each form, and there are separate chapters dealing with the developmental physiology of each group. The conclusions, which are based on the experimental work, are well documented. There is an adequate bibliography (12 pages) of the more important recent and older references.

The relative emphasis on the various topics (indicated, in part, by the amount of space devoted to each) has been carefully considered and, in my opinion, correctly placed. In addition, the book has been kept sufficiently concise for use in a one-semester course by a rigid systematizing of the descriptive materials contained in the representative life-histories. As the author states in the introduction (page vi), the book aims to contribute toward "a realization, by the student, that development is a natural process which is open to scientific analysis by research methods not essentially different from those of the inorganic sciences."

The excellent, well-labeled illustrations utilize a variety of techniques, from photographs to line drawings, and are beautifully reproduced. Many of these figures have not been published before.

In short, the book is a usable and useful addition to the available textbooks of modern embryology.

D. P. COSTELLO

University of North Carolina

The Genus Achlya: Morphology and Taxonomy. University of Michigan studies, scientific series. vol. XX. Terry W. Johnson, Jr. University of Michigan Press, Ann Arbor; Cumberlege, Oxford University Press, London, 1956. 180 pp. Illus. $4.50.

This short monograph deals with the largest genus of a family of aquatic Phycomycetes, the Saprolegniaceae, or "water molds." Taxonomically the entire family is a difficult one—extreme variability of vegetative and asexual structures leaves only the slightly less variable sexual organs and features as taxonomic criteria—in which the largest component genus certainly contains its full share of puzzling relationships and uncertainties. The author is clearly aware of these difficulties and limitations, uncomplainingly accepts them as completely unavoidable, and proceeds about the treatment of the group with admirable firmness and discrimination and with an equally admirable lack of pomposity: on page 74 he actually reduces *Achlya michiganensis* Johnson to synonomy. A great deal of effort obviously went into securing collections from widely scattered sources, particularly cultures or preserved samples, or both, of original materials from previous authors in the group; these materials, together with Terry Johnson's own numerous collections, constitute an extensive basis