lished since, the symposium; the other comprises broader reviews of some important topics in the field of contractility. In the papers of the first type the results are presented against a background sketched in sufficient detail to enable newcomers to the field to get a quick orientation. In fact, the introductions to some of the papers reporting new findings—for example, that by P. Dreizen, L. C. Gershman, P. S. Trotta, and A. Stracher on myosin subunits—would qualify as concise reviews. H. E. Huxley's excellent discussion of recent x-ray work on living muscle focuses on the role of cross bridges in the contractile process. G. F. Elliot's paper raises some important questions, particularly with regard to the role of electric charges in the interaction of cross bridges with actin. T. Hayashi describes some experiments and offers some speculations on the role of the nucleotide bound to actin and explores possible changes in the actin filaments during contraction. B. M. Twarog deals with the role of Ca^{++} in the catch mechanism, and M. Barany presents evidence concerning the quantitative relationship of the speed of muscle contraction and the adenosine triphosphatase activity of myosin.

Those interested in contractility in general, as well as specialists in some narrower aspect, will find the broader reviews of interest. Particularly stimulating are the two papers (by H. A. Scheraga and L. Mandelkern) dealing with conformational changes and molecular mechanisms that may cause contraction. The discussion following these papers brought out the need of considering general principles in the light of the specific structures found in muscle. S. V. Perry's introduction to the session on striated muscle amounts to an excellent introduction to the myofibrillar proteins, whose known number is, it seems, rapidly increasing. It is to be regretted that no paper deals in detail with the interaction among actomyosin, tropomyosin, and troponin, which is subject to regulation by Ca ions and seems to play a key role in the process of excitation-contraction coupling. J. W. S. Pringle's analysis of the rather specialized system of insect flight muscle may be applicable in general to the currently accepted sliding-filament theory of muscle contraction.

The papers reviewing nonmuscular contractile processes are a welcome addition to the volume, since they cover material not well known to those interested in the more conventional processes of muscular contraction. The reversible fibral formation involved in the formation of the mitotic apparatus, discussed by S. Inoue and H. Sato, may have a relevance to the formation of actin filaments; and the mechanism of ciliary and saltatory movement, discussed by P. Satir and L. I. Rebhun, respectively, may bring to light processes that have been overlooked in thinking about possible ways in which the cross bridges between myosin and actin filaments move.

This sampling of the contents of this book shows that it may be profitably used by both novice and veteran investigators in the field of contractility, as well as by those whose chief interest lies elsewhere but who would like to find out what some of the current problems in contractility are.

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Morphology at a Turning Point

The Interpretation of Animal Form. Essays by Jeffries Wyman, Carl Gegenbaur, E. Ray Lankester, Henri Lacaze Duthiers, Wilhelm His and H. Newell Martin, 1868–1888. Translations and introduction by WILLIAM COLEMAN. Johnson Reprint Corp., New York, 1967. xxx + 191 pp., illus. $10. Sources of Science, No. 15.

It has recently become a popular practice to combine within the covers of a single book articles and essays originally published in periodicals or in other books; the advantages to students (and librarians) are evident. Coleman's collection of six essays goes beyond the prevalent custom of republishing articles which professors hope every student in a particular field will read; he has chosen instead to present provocative essays a number of which in the normal course of events may have escaped the notice of scholars as well as of beginning students.

The first essay in the book, by Jeffries Wyman, on symmetry and homology of limbs (1868), used to be called to the attention of graduate students at Yale by Ross Harrison, but one is permitted to wonder how many of them assign it to their students for the benefit of its substance. One other essay in Coleman's book, E. Ray Lankester's "Degeneration" (1880), is, like Wyman's, an interpretation of specific biological data. The remaining four essays concentrate not only on morphological facts but on attitudes for their study. These are by Carl Gegenbaur on "The condition and significance of morphology" (1876); by Henri Lacaze Duthiers on "The study of zoology" (1872); by Wilhelm His "On the principles of animal morphology" (1888); and by H. Newell Martin on "The study and teaching of biology" (1877).

Each of the essays except that of Lacaze Duthiers is presented in its entirety. Coleman has himself translated into English the portion of this essay included in the collection, and he has also translated the article by Gegenbaur. The translations are excellent. The remaining four essays (including the one by His, which was originally published in English) are reproduced in facsimile, or in reduced facsimile. The volume is attractive in appearance; careful bibliographical notes further enhance its value.

Some editors of collected articles have presented without comment the essays they have selected to reprint; others have written introductory notes discussing the separate essays or groups of them. Coleman has instead incorporated his comments on the articles he has chosen in a single coherent introduction which not only points up their significance but which in itself is a brilliant and original essay on morphological thought in the 1800's and its movement into physiology and experimentation toward the turn into the new century. Thus there are seven excellent reasons for owning this book, and, as in the case of the phenomenon of biological organization, which Coleman names as one of the foremost problems of biology, the whole is more than the sum of its parts.

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Modes of Action

Wirkungsmechanismen von Fungiziden und Antibiotika. Mechanisms of Action of Fungicides and Antibiotics. An international symposium, Gotha, May 1966. M. GIRBARDT, Ed. Akademie-Verlag, Berlin, 1967. xii + 443 pp., illus. Paper, DM 29.50.

The book is a report of proceedings of a symposium sponsored jointly by the Biological Society of the German