breadth of his knowledge, he has written a fascinating but ultimately unsatisfactory book. He suggests that social scientists probably have done themselves the ultimate disfavor by linking themselves terminologically with the older sciences, and certainly have stultified themselves by analogies with the "natural" sciences. He also believes, and I agree, that the social-science attitude—which he calls the sociological imagination—is the pervading *Geist* of our age.

The first half of this book, in which Mills tries to get his own position straight, is a critique in broad strokes of some features of several of the foremost schools of sociology. He makes good cases, but unfortunately he writes in a style essentially popular about matter in which there is only specialist interest. The style will alienate rather than persuade his colleagues. At the same time, it is doubtful if the general reading public cares to be edified with denigration of the particularities of system building or opinion factoring.

The second half of the book explores Mills' thesis that the sociological imagination concerns itself with the converging points of history, biography, and society, and that it should distinguish *troubles* from *issues* and face the issues of modern society squarely. This section can be read as a clarion call for a successor to Max Weber.

Mills' romp through the theoretical fields is not as giddy or as enlightening as Sorokin's. His *engagement* is not as compelling as Raymond Aron's. And what he has to say is ill-matched with the way in which he chose to say it.

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Semiconductors. N. B. Hannay, Ed. Reinhold, New York; Chapman and Hall, London, 1959. xxiii + 767 pp. Illus. $15.

This volume is the most recent addition to the American Chemical Society's "Series of Chemical Monographs." Written and edited by 17 members of the technical staff of Bell Telephone Laboratories, the volume is a happy balance of chemistry, metallurgy, physics, and electronics and should prove useful to a wide circle of readers.

Essentially, the book is a collection of authoritative and up-to-date review articles on divers aspects of semiconductor physics and chemistry. The introductory article by the editor, N. B. Hannay, summarizes the basic concepts and principles of semiconductor physics. The article by J. J. Lander provides a survey of some of the problems of semiconductor chemistry; these are dealt with in more detail in subsequent sections.

The next five contributions are concerned with the physical chemistry of semiconductor systems: M. Tanenbaum discusses semiconductor crystal growing; C. D. Thurmond describes the control of composition in semiconductors by freezing methods; C. S. Fuller considers the theory of defect interactions; H. Reiss and C. S. Fuller discuss diffusion processes in germanium and silicon and illustrate the important advantages offered by semiconductors in general for the study of diffusion processes; and D. G. Thomas concludes this section by reviewing the chemistry of some compound semiconductors.

The eight articles that follow deal with the physical properties of various semiconductors. T. H. Geballe describes the progress that has been made in understanding the physical behavior of group IV semiconductors, while J. M. Whelan does the same for other covalent semiconductors, particularly group III–V, II–IV, and V–VI compounds, boron, selenium, and tellurium.

H. J. Hrostowski discusses infrared absorption and demonstrates how our knowledge of semiconductors has been furthered by optical studies. R. G. Shulman considers trapping and recombination processes arising from nonequilibrium distributions of mobile carriers. J. N. Hobstetter examines the nature and role of structural defects, particularly dislocations, in controlling plastic deformation and other properties of semiconductors.

A. R. Hutson presents a critical survey of the semiconducting properties of some oxides and sulfides, including alkaline earth oxides, sphalerite-wurtzite compounds, and the lead sulfide family. F. J. Morin provides a most illuminating discussion of the electrical, optical, and magnetic properties of oxides of the third transition metals. In the final article on bulk properties, C. G. B. Garrett reviews most competently the subject of organic semiconductors.

The remaining two contributions are concerned with the physics and chemistry of semiconductor surfaces. J. T. Law deals primarily with solid-vapor and solid-vacuum interfaces, while J. F. Dewald treats semiconductor electrodes and hence the semiconductor-electrolyte interface. At the end of the book there is a subject index, but, surprisingly, no author index.

In my opinion this volume is the finest, best organized, and generally most useful collection of survey articles on semiconductors yet assembled. It is easier to gain an over-all picture of the present state of our knowledge of semiconductors by reading this volume than by reading scattered review articles published elsewhere. The individual articles in the present volume are comparable, with respect to quality and method of exposition, to the excellent reviews appearing in the Seitz and Turnbull "Solid State Physics" series.

It is perhaps worth mentioning that the subjects of luminescence and photoconduction, which are closely related to that of semiconduction, might have been treated in an additional chapter or two. As it is, these subjects are not given the comprehensive coverage they deserve. But this is a minor criticism of an otherwise excellent book.

To conclude, this volume is warmly recommended to graduate students and to professional scientists in the several disciplines which constitute the field of semiconductors.

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Cumulative Record. B. F. Skinner. Appleton-Century-Crofts, New York, 1959. x + 427 pp. Illus. $6.50.

When B. F. Skinner was scarcely 22 he read a series of articles in which Bertrand Russell examined John B. Watson's behaviorism. Many years later he told Russell that these articles had been responsible for his interest in behavior. "Good Heavens!" exclaimed Lord Russell, "I had always assumed that these articles had demolished behaviorism." Russell may have demolished Watson's theories—not a difficult task; but Watson's spirit is indestructible. Cleaned and purified, it breathes through the writings of B. F. Skinner. Watson rejected philosophic speculation and demanded an objective science of behavior as rigorous as Newton's science of the physical universe; Skinner defends the rejection of speculation with the sharpness of a trained philosopher and presents us with an analysis of behavior that Newton might have envied. Probably no psy-