request that he accept the directorship of the Johns Hopkins Institute. The 15 years Sigerist spent at this institute were critical in the development of medical history in America.

The diaries enable an appreciation of Sigerist the man as well as his many travels and activities. One reads of Sigerist's hopes for medical history in America, of the energetic William Welch, of Harvey Cushing, at 62 still nervous before each operation. One encounters also Sigerist's bouts with the American press and medical profession resulting from his regard for the Soviet Union and his espousal of "the complete socialization of medicine." Finally, the reader finds Sigerist, ill, a scholar frustrated by criticism and administrative minutiae, leaving the United States to spend his last years in Switzerland.

Sigerist lived during eventful times that were generally unreceptive to his field of scholarship and his social ideas. Because he dedicated his total energies to both, Sigerist's perceptive personal writings illumine the academic and social modes of Europe and America during his lifetime and will interest the general reader as well as the medical historian.

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Superconductivity

An Introduction to the Theory of Superconductivity. CHARLES G. KUPER. Oxford University Press, New York, 1968. xxii + 301 pp., illus. \$9.60. Monographs on the Physics and Chemistry of Materials.

This is an admirable little book. In its 272 pages of text it treats almost all aspects of the theory of superconductivity. It even includes a short development of some elementary aspects of the theory of solids, including the theory of electrons in a periodic lattice, and finally works up to the theory of the electron-phonon interaction. Some of the recent aspects of the effects of various "pair-breakers" in superconductors are not treated, although the chapter on propagators in superconductors can serve as an introduction to this field. Most aspects of the presentation are clear and concise, and because of this and the small size of the book it can be taken along on trips to pass the time during the usual airline delays.

The flavor of the book is overwhelmingly English, and much emphasis is given to the work of Pippard and Frohlich in the 1950's. This treatment gives a different perspective on the development of the theory of superconductivity, especially the work of Frohlich, which is not emphasized in most recent American treatments of the subject. Another interesting case is the crucial discovery of the isotope effect. In this country credit is usually given to E. Maxwell and to B. Serin, C. A. Reynolds, and L. B. Nesbitt for simultaneous discovery. I was surprised to see Maxwell's work neglected in Kuper's discussion; instead, the work of Allen *et al.*, which is virtually unknown here, is mentioned.

A few comments about the treatment of the Ginzburg-Landau theory are in order. In general this section appears unenthusiastic and a little weak, although with the brief analysis of type II superconductors it is probably a more detailed treatment than most general texts provide. The author begins with statements of why the Ginzburg-Landau theory is less general than the Pippard theory and also includes statements to the effect that the original motivation of the Ginzburg-Landau theory is less direct than the Pippard theory. In the first case Bardeen has shown that the Ginzburg-Landau theory can be modified to yield nonlocal equations of the Pippard type. As to the motivation of the Ginzburg-Landau theory, I think that theory is as clearly motivated as the Pippard theory. In their original paper Ginzburg and Landau make their motivations quite clear, and mention that they are taking surface energies into account. Next, there seems to be some confusion in the book between Pippard coherence length and the coherence length of the Ginzburg-Landau theory, which describes the characteristic distance over which the order parameter of the Ginzburg-Landau theory changes. In surface energy arguments, such as that on page 112, the Ginzburg-Landau coherence length should appear in the expression $\xi H_c^2/8\pi$, and not the Pippard length as stated. Also, the Ginzburg-Landau expression for the free energy given on page 108 is the Helmholtz function and not the Gibbs function as stated. Almost every author says something slightly different about this point, but I think that the expression on page 108 is the Helmholtz function.

The brief discussion of Pauli spin paramagnetism and the Knight shift is weak and does not take account of the latest results. With recent new measurements on Al and the theory of spin-orbit scattering of Ferrell and Anderson there are no particularly puzzling questions left to hamper our understanding of the Knight shift.

Of course, these criticisms are rather minor, and I would like to say more about some of the other excellent features of this book. The complete treatment of second quantization and the chapters on quasi-particles and propagators make for a fairly complete introduction to the more general aspects of the theory. Another valuable feature of the book is the extended discussion of the problem of the Meissner effect in both the phenomenological theory and the microscopic theory. In general, the author does not hide problems and difficulties presented by various theoretical arguments, and this gives the reader valuable perspective on the limitations of the treatments.

All in all, this book is one of the best elementary treatments of the subject and will be a valuable addition to the libraries not only of aficionados, but also of general readers interested in learning about superconductivity.

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Efforts toward a New Science

The Neurosciences. A study program planned and edited by GARDNER C. QUARTON, THEODORE MELNECHUK, FRANCIS O. SCHMITT, and the associates and staff of the Neurosciences Research Program. Rockefeller University Press, New York, 1967. xx + 962 pp., illus. \$17.50.

Man must understand better his own behavior. His nature requires it. He is inquisitive and moves along a path whose direction and destination are determined by a constantly shifting balance between his preserving and destroying impulses. This truism has surely been uttered in some form since the beginning of men. And it is equally sure that man has no proper science now to lead him to this urgently needed understanding.

A sense of urgency is not enough, however, to create the new science. That it is needed and that talented people are willing to help make it are also not enough. A science begins to flourish when the tools are ready and when preliminary explorations reveal where to begin. The creation of a new