at meeting Registers. This is the reproduction of the complete up-to-date registrants' file in book form quarterly for distribution to employers at their request. A nominal fee to cover the cost of printing and mailing is charged. Each applicant is personally checked for each edition. The Institute constantly searches for available physicists by placing notices and advertisements in journals and bulletins, and by direct mail to graduate students.

The Institute informally concerned itself with placement early in its existence. The activity was first formalized under the direction of Mr. George H. Burnham in 1942, when the initial Register was set up in Baltimore. The war then caused an interruption, except for continued informal service, until, in 1946, Dr. Donald E. Kirkpatrick of Queens College fathered the present plan of operation. The Institute is greatly indebted to him also for subsequent development of the Service, one which now brings the Institute considerable good will. The present staff of the Placement Service ordinarily consists of a full time secretary plus the advice of a part time supervisor. During the Registers at meetings, additional help is obtained from other departments of the Institute and from generous volunteers outside of the AIP staff.

The next Placement Service Register will be set up at the forthcoming 25th Anniversary Meeting of the Institute, January 30–February 4, 1956. Two floors of the Hotel New Yorker have been reserved for it.

The statistics given below show how the Placement Service has grown as an activity of the AIP. They also shed light on the favorable employment situation from the standpoint of physicists in the United States, although, of course, they by no means reflect all of the recruitment activity in the country. There were actually more job openings than listed in the second column of figures, because when an employer stated "several positions" it was only counted as two. It should be noted also that only a small percentage of the registrants other than students were actually unemployed. They were mostly seeking jobs better suited to their talents, ambitions, and special circumstances than those they currently had.

PLACEMENT REGISTER STATISTICS

Register Held	*Employers Represented*	*Definite Openings*	*Registrants*
May 1942	35	No Record	242
January 1946	69	76	187
April 1946	97	120	119
June 1946	122	236	74
January 1947	166	186	170
February 1947	202	222	189
May 1947	94	280	92
October 1947	73	143	67
January 1948	225	432	259
February 1949	286	No Record	242
February 1950	119	285	434
April 1950	133	281	370
February 1951	177	1422	361
October 1951	215	809	201
January 1952	207	1303	271
January 1953	203	663	222
April 1953	157	579	277
January 1954	158	519	367
April 1954	139	371	207
January 1955	198	486	234

Books

Progress in Low Temperature Physics. Volume I. Edited by C. J. Gorter. 418 pp. (North-Holland Publishing Company, Netherlands) Interscience Publishers, Inc., New York, 1955. $8.75. *Reviewed by Ernest A. Lynton, Rutgers University.*

The all too meager collection of books on low temperature physics has just been greatly enriched by the appearance of this important collection of eighteen excellent review articles on various parts of the field. The considerable expansion and rapid progress in cyrogenics during the last few years had for some time already outdated much of what had appeared in books and review articles, and the need for a summary of recent results had steadily increased. Many people have talked about this matter; one must be very grateful to Professor Gorter for having done something about it.

He has not only done something; he has done it well. The table of contents of the book indicates the multitude of subjects which have been covered, and the excellent choice of people to write on them: I, The Two Fluid Model for Superconductors and Helium II, by C. J. Gorter; II, Applications of Quantum Mechanics to Liquid Helium, by R. P. Feynman; III, Rayleigh Disks in Liquid Helium II, by J. R. Pellam; IV, Oscillating Disks and Rotating Cylinders in Liquid Helium II, by A. C. Hollis Hallett; V, The Low Temperature Properties of Helium Three, by E. F. Hammel; VI, Liquid Mixtures of Helium Three and Four, by J. J. M. Beenakker and K. W. Taconis; VII, The Magnetic Threshold Curve of Superconductors, by B. Serin; VIII, The Effect of Pressure and of Stress on Superconductivity, by C. F. Squire; IX, Kinetics of the Phase Transition in Superconductors, by T. E. Faber and A. B. Pippard; X, Heat Conduction in Superconductors, by K. Mendelssohn; XI, The Electronic Specific Heat in Metals, by J. G. Daunt; XII, Paramagnetic Crystals in Use for Low Temperature Research, by A. H. Cooke; XIII, Antiferromagnetic Crystals, by N. J. Poulis and C. J. Gorter; XIV, Adiabatic Demagnetization, by D. de Klerk and M. J. Steenland; XV, Theoretical Remarks on Ferromagnetism at Low Temperatures, by L. Neel; XVI, Experimental Research on Ferromagnetism at Very Low Temperatures, by L. Weil; XVII, Velocity and Absorption of Sound in Condensed Gases, by A. van Itterbeek; and XVIII, Transport Phenomena in Gases at Low Temperatures, by J. de Boer.

Each chapter was written by an outstanding authority currently engaged in the particular field, and in close touch with other workers, and thus able to cite much

unpublished and even in part speculative material. As, in addition, the book was edited and published in the astonishingly short time of about ten months, it is remarkably up-to-date in all subjects covered, and in some chapters even adds much to previously published results.

The contents of this book strikingly illustrate that low temperature physics really is, as Gorter puts it, "a transverse section" through virtually every field of modern physics. Unfortunately this is the reason for an unavoidable shortcoming of the volume: the exclusion of several topics about which reviews have recently appeared in similar compendia covering other fields. Pippard's article on "Metallic Conduction at High Frequencies and Low Temperatures", and Van den Handel's on "Paramagnetism" in the latest volume of *Advances in Electronics and Electron Physics* are cases in point. Even more unfortunate are some omissions in the present volume not filled by previous publications. It is much to be hoped that a second volume of *Progress in Low Temperature Physics* will appear very soon, and that this will include review articles on important but presently slighted topics such as the theory of superconductivity, low temperature transport phenomena, especially the various oscillatory effects, and the ever troublesome problem of the temperature scale. However, carping on what *is not* in the book must not be allowed to detract from the high praise due authors, editor, and publishers for what *is* in it. This volume will be used as a basic reference for many years, and its possession is imperative for any low temperature physicist.

Sonics. By Theodor F. Hueter and Richard H. Bolt. 456 pp. John Wiley and Sons, Inc., New York, 1955. $10.00. *Reviewed by R. B. Lindsay, Brown University.*

It is a well-known characteristic of our age that progress in technology goes hand in hand with fundamental research. Until fairly recently this has been exemplified in acoustics mainly by the tremendous improvements made in the production, transmission and reception of sound signals, e.g., speech and music, as well as the greatly increased knowledge of the acoustic properties of materials and their proper disposal for use in architectural acoustics. The past two decades, however, have witnessed the blossoming of a vast host of new types of acoustical applications, of which the processing of suspensions in gases and liquids, the testing and cleaning of solids, and the analysis of the physical properties of fluids are only a few typical examples. The authors of the present volume have decided to coin a new word, "sonics", to include such aspects of acoustics. They define it as encompassing the "analysis, testing and processing of materials and products by the use of mechanical vibratory energy". It is their feeling that the technologists who employ sound in this way can profit from a unified exposition of the principles of acoustics, covering all readily obtainable frequencies and intensities, and their application to sonic techniques and equipment. They have succeeded admirably in their design.

When physicists write for technologists they have two common dangers to guard against. They may be too easily tempted to produce an exposition of rigorous, fundamental theory which is difficult for the practical user to understand and hence of very little use to him. On the other hand they may prepare what is little more than a handbook or compendium of formulas and recipes which the practical man is apt to employ without due judgment and discrimination and therefore often gets himself into much trouble. It is a pleasure to report that the authors of *Sonics* have not succumbed to either temptation. Their survey of general principles puts the stress on physical meaning and intuition, where it rightly belongs in a book of this kind, and instead of merely cataloging the vast list of special devices now available they provide typical and well-chosen illustrations for each technique discussed. The summary of theory, indeed, by focusing attention on gaps and weak spots in our knowledge provides a useful stimulus to further basic research. Hence the volume has much of value to offer the acoustical research physicist as well as the technologist.

The first three chapters discuss the fundamental acoustical principles. Chapters 4 and 5 are devoted to a thorough treatment of piezoelectric and magnetostrictive transducers respectively. Sonic processing, both methods and devices, provides the theme of chapters 6 and 7, while chapter 8 takes up sonic testing and analysis. There is a very valuable appendix on acoustic relaxation mechanisms in fluids.

The book is copiously illustrated with excellent diagrams as well as clear pictures of sonic equipment. One of the useful special features is the presence of a number of tables, each summarizing the various aspects of a given phenomenon. Thus the one on radiation pressure shows at a glance the expressions for this quantity for all types of commonly encountered physical situations. The technologist will particularly appreciate the large number of clear charts and the abundance of useful numerical data.

All who are interested in the applications of acoustics, both to the study of the properties of matter as well as to the modern applications of sound radiation in technology, will wish to have this volume readily available.

Molecular Vibrations. By E. Bright Wilson, Jr., J. C. Decius, and Paul C. Cross. 388 pp. McGraw-Hill Book Company, Inc., New York, 1955. $8.50. *Reviewed by D. E. Mann, National Bureau of Standards.*

Over the last 25 years, the vibrational spectra of a great variety of molecules have been investigated and a vast fund of experimental data accumulated. Although the basic theoretical methods and tools have been available for some time, detailed analyses have been carried through for only a small fraction of the molecules for which data are at hand. At least in part, this is because