Book Reviews

On the Problem of Communication among Scientists

Frontiers in Physics. A lecture and reprint series. David Pines, Ed. *Problems in Quantum Theory of Many Particle Systems*, L. van Hove, N. M. Hugenholtz, and L. P. Howland (259 pp.); *The Many-Body Problem*, David Pines, Ed. (469 pp.); *S-Matrix Theory of Strong Interactions*, Geoffrey F. Chew (192 pp.); *The Theory of Fundamental Processes*, R. P. Feynmann and H. T. Yura (182 pp.); *Quantum Electrodynamics*, R. P. Feynmann. Notes corrected by E. R. Huggins and Y. T. Yara (208 pp.); *Nuclear Magnetic Relaxation*, N. Bloembergen (187 pp.); *The Mössbauer Effect*, Hans Frauenfelder (350 pp.). Benjamin, New York, 1962. Paper, $3.95 each.

This series forms an important new development in scientific publishing and makes a very valuable contribution to the solution of a serious problem: the growing difficulty of communication among scientists in the presence of a high level of background noise created by the large and growing number of papers that are published by a growing number of journals. Any newcomer to a given domain of physics—and one can become a neophyte these days at an alarmingly rapid rate—is faced by the problem of selecting out of the myriads of published papers those that are most significant and seminal. Even experienced hands have trouble and resort to the word-of-mouth method, which is perhaps the most important function of conferences. In fact, it is probably true that at the present time there is a greater possibility than ever before that a really important piece of work will remain unnoticed. There is much duplication, for there are some who would rather write than read—that is, they would rather work out their own ideas than spend an equivalent amount of time digging out, from the huge mass of publications, that paper which is relevant. This rather painful situation appears to be growing worse with time.

Clearly this problem of communication is greatly eased by these volumes in which are made available the important papers in a given field. An introductory analysis of the papers is provided in most of the volumes. What a relief it is to be presented with those original contributions that form the basis for a contemporary treatment of a problem rather than to face the alternative of extracting the fruitful papers from the vast barren majority! Experts are needed to make these judgments, and the authors of this series satisfy that criterion.

Pines, the editor of the series, contributes what is to be regarded as a model volume for the series. In the first hundred pages of *The Many-Body Problem*, Pines presents a clear discussion of the concepts and methods employed in this field. This is followed by about 350 pages in which the important original papers are reprinted. Much the same attack, and one that is also very successful, is used by Frauenfelder in his book, *The Mössbauer Effect*. Chew's volume, *S-Matrix Theory of Strong Interactions*, is also in the same spirit but in a somewhat different sense; because of its very particular type of approach (and the very broad range of application), Chew's volume does not contain as many reprinted papers as the other volumes.

The volume edited by van Hove, Hugenholtz, and Howland, *Problems in Quantum Theory of Many Particle Systems*, suffers because it contains no introductory analysis, which would have been very useful. Bloembergen's *Nuclear Magnetic Relaxation* is a reprint of his Ph.D. thesis. *Quantum Electrodynamics* contains Feynmann's notes for a one-semester course designed "to present the main results and calculational procedures of quantum electrodynamics in as simple and straightforward a way as possible." In *Theory of Fundamental Processes*, we are presented with an almost semi-popular (if the populace are graduate students) treatment of the problem of elementary particles.

All of these volumes contain very worthwhile material. They do not all have the same sort of goal in mind. In my opinion, the most useful and probably the most significant for the future of physics are those that follow the format which Pines employs in his volume.

The books are clearly printed and legible, although there is considerable reduction in the format of those articles that are reprinted from journals published by the American Institute of Physics. All of these books are paperbound.

HERMAN FESHBACH
Department of Physics,
Massachusetts Institute of Technology

Mathematics Textbooks

Introductory College Mathematics. Chester George Jaeger and Harold Maile Bacon. Harper, New York, ed. 2, 1962. xvii + 423 pp. Illus. $6.50.

Elementary and Advanced Trigonometry. Kenneth S. Miller and John B. Walsh. Harper, New York, 1962. xi + 350 pp. Illus. $5.75.

Analytic Geometry: A Vector Approach. Charles Wexler. Addison-Wesley, Reading, Mass., 1962. x + 291 pp. Illus. $6.

Foundations of Geometry and Trigonometry. Howard Levi. Prentice-Hall, Englewood Cliffs, N.J., ed. 2, 1960. xiv + 347 pp. Illus. Trade ed., $10.60; text ed., $7.95.

The common features of the mathematics texts reviewed here are that they are written for freshman courses and that none is designed for the increasingly popular course in which analytic geometry and calculus are studied simultaneously. Apart from this, the texts have little in common and are designed for distinct courses. Three are distinct departures from usual texts; for one, the departure is complete.

The one text that covers its subject matter in the standard way is *Introduc-*