measuring devices in the research laboratory. The chapters dealing with the application of electrical methods to measurements of light, heat, sound, statics, kinetics, liquids and gases, and time may be particularly useful in this respect.

Applied Electrical Measurements is well documented, with nearly 500 references to engineering literature. It is certainly a valuable reference work, which should be within the reach of every physicist who is concerned with problems of measurement.

Earth Satellites as Research Vehicles: Proceedings of Symp. at FI, April 1956. 115 pp. Journal of the Franklin Institute, Philadelphia, Pa., 1956. Paperbound $2.50. *Reviewed by S. F. Singer, Maryland University.*

This little volume is an account of a conference held at the Franklin Institute on April 18, 1956. Several of the papers are quite outstanding, some of the others repeat well-known work in the literature or present very detailed calculations. Few of the papers contain references. G. H. Clement gives some data from computations on an earth to moon trajectory. K. A. Ehricke discusses orbits of unmanned satellites which can reach out beyond the moon and presents various detailed calculations of payload weight as functions of gross weight and similar engineering data. He also discusses the problem of communication from the satellite to the earth and some of the problems arising in re-entry. In his treatment the outer skin is insulated from the interior of the satellite and is assumed to be thin enough to reach equilibrium temperatures. The maximum skin temperature reached is 3100°R. A similar approach for recovery is discussed by R. W. Porter; he suggests the use of a teflon skin which is allowed to evaporate and thereby use up some of the heat energy. L. Spitzer discusses quite interesting astrophysical research applications for an artificial satellite. J. DeNike presents some numerical integrations of the orbit of the satellite in the presence of drag and the effects of the earth's oblateness. Interestingly enough the apogee and perigee altitudes both are found to decrease with a superimposed oscillation. L. Lawrence discussed the use of a satellite as an aid in celestial navigation.

Many of the points brought forward in the meeting applied to space vehicles of the future rather than to immediate minimum earth satellites.

The Mathematics of Physics and Chemistry. By Henry Margenau and George M. Murphy. 604 pp. D. Van Nostrand Co., Inc., Princeton, N. J., 1956. $6.85. *Reviewed by V. Twersky, Sylvania Electronic Defense Laboratory.*

Inasmuch as the first edition of this encyclopedic work ran through fifteen printings since its appearance in 1943, it may be regarded as too well known to call for a detailed review. The second edition differs little from the first: the style and structure are unaltered,

and it will remain popular as a quick practical reference to a variety of mathematical methods. The major differences are the new material on Laplace and Fourier transforms, and the revision of the sections on numerical calculations, integral equations, and group theory.

Recent Advances in Science: Physics and Applied Mathematics. (1st Symp. on Recent Advances in Science, NYU, 1954) Edited by Morris H. Shamos and George M. Murphy. 396 pp. New York U. Press and Interscience Publishers, Inc., New York, 1956. $7.50. *Reviewed by T. Teichmann, Lockheed Aircraft Corporation.*

This collection of twelve articles gives a review of some of the significant advances in physics and applied mathematics in recent years. It is not meant to be an over-all review of these topics, nor is any attempt made to give a complete or connected account of them.

While all the articles will undoubtedly make worthwhile reading for anyone interested in physical science and mathematics, particularly in view of their distinguished authorship, the rather vague aims of the book in general have led to a wide variety of approaches, including both the "broad brush" verbal approach and the more informative (and difficult) technical discussion. For those readers interested in some quantitative information along with the technical jargon the articles of Bethe (on Nuclear Structure), Haworth (on Electronuclear Machines), and Brickwedde (on Cryogenics) are especially noteworthy. With the exception of the articles by Shockley (Transistors) and Bozorth (Ferromagnetism), there is a dearth of references throughout the book.

Atomic Energy and Congress. By Morgan Thomas. 301 pp. The U. of Michigan Press, Ann Arbor, Mich., 1956. $4.75. **Government Contracting in Atomic Energy.** By Richard A. Tybout. 226 pp. The U. of Michigan Press, Ann Arbor, Mich., 1956. $4.50. *Reviewed by Arthur Beiser, New York University.*

The atomic energy program in the United States has been and is unusual in many respects other than the purely scientific. Moral issues of great magnitude have arisen hand in hand with political ones, and decisions have had to be made whose future effects are largely unknown. On another level, a curious relationship has developed between the Atomic Energy Commission and the citizen in which the latter, while required to pay the piper, is rarely privileged to call (or even to know) the tune. This problem is the subject of *Atomic Energy and Congress,* a comprehensive and useful account covering the years from 1946 to 1955. Interviews as well as documents were used by the author and his staff in exploring the collaboration between the AEC and the Joint Congressional Committee on Atomic Energy, and the book traces the various degrees of intimacy be-