Einführung in die Theoretische Physick. By Max Planck. 1. *Einführung in die Allgemeine Mechanik.* 4th ed. viii+226 pp., 43 figures. R.M. 6—; bound, R.M. 8—. 2. *Einführung in die Theorie der Elektrizität und des Magnetismus.* 2d ed. viii+210 pp., 13 figures. R.M. 6—; bound, R.M. 8—. Leipzig, Hirzel, 1928.

These two volumes form the fourth and second editions respectively of two of the component parts of a work designed, when completed, to offer an introduction to the whole field of classical theoretical physics. The author's object is apparently to provide a series of texts which can be used with profit by the independent reader as well as by the university student. It would seem that in these two books the aim is well achieved.

The volume on mechanics is developed mainly from the standpoint of the author's pedagogical thesis that students beginning theoretical physics usually have less trouble with the mathematical discussion than with the physical interpretation. In line with this view the subject is not presented as a complete logical structure but the development is from the very simple to the more complicated. Elegant proofs of theorems give way to interpretative methods even at the expense of space. In formal construction the work is divided into the usual parts, viz. mechanics of a particle and mechanics of a system of particles. The treatment in the former case is not particularly noteworthy save that the author takes the concept of *force* as fundamental, ignoring the usual difficulties confronting the beginner in this connection. An interesting feature of the second part is the treatment of the Hamilton-Jacobi equation and its integration, so important in modern atomic theory.

The author has followed a somewhat different method in the volume on electricity and magnetism. There the treatment is severely logically deductive in nature rather than experimentally inductive. This is deliberately chosen to preserve unity of presentation and to emphasize the few fundamental concepts instead of the many diverse applications. The classical theory of Maxwell is followed with principal emphasis on the concepts of energy density and energy flow. Indeed the electric and magnetic fields are defined in terms of the former and the field equations are deduced by the application of the laws of Joule and Poynting and the conservation of energy. Electrostatics and magnetostatics are treated as special cases of the more general field relations (that is, no change with the time). Electric currents are treated as illustrations of "stationary" fields, viz. fields in which the electric and magnetic intensities do not change with the time but in which there is a continual change of electrical energy into heat. The "non-stationary" phenomena which form the general case of electrodynamics are treated in the last 60 pages of the book. Here the development follows classical lines very closely, and there is practically no mention of the electron theory. The difficulties of the original Maxwell-Hertz theory applied to moving media are merely mentioned and but a page or two devoted to Lorentz's solution.

The style is clear and the type is good. No serious errors have been detected. In both volumes the figures are rather poorly drawn.

R. B. LINDSAY