

*Einführung in die moderne Atomphysik in allgemeinverständlicher Darstellung.*  
By Arthur March. Leipzig, Barth, 1933. iv+115 pp.

The changes in our conception of the atom, initiated by the work of de Broglie, Schroedinger, and Heisenberg, have been so profound that interest in the innovations, and indeed knowledge of them, could not remain confined to a small circle of professional scientists. Accordingly, many attempts at explaining and publicising the new "truths" have been made, but few have been as successful as the book under review. The author does not undertake the ill-fated task of explaining quantum mechanics in words of one syllable. He addresses himself to the large group of individuals who have some knowledge of mathematics and the other exact sciences, and a healthy curiosity to know what is going on in physics.

If March's treatment of his subject were to be characterized by a single word, only the German "anschaulich" would be in place. Wave mechanics is introduced in the first part of the book, and a gradual transition is then made to statistical theory. Visual clarity is maintained throughout. The philosophical outlook is the one which has become orthodox among physicists today: theory describes experimental facts only; questions which can not be settled experimentally are meaningless, etc. Philosophers who are unwilling to embrace these doctrines may perhaps not find the book convincing.

Pedagogically, however, the book is excellent. It is cleverly illustrated with diagrams and figures. This reviewer has read it with considerable pleasure and finds in it many hints of value in teaching the subject.

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*Le Problème de Cauchy et les Équations aux Dérivées Partielles Linéaires Hyperboliques.* By J. Hadamard. Paris, Hermann, 1932. xiv+542 pp.

The present volume is a revised and considerably augmented translation of the author's classical *Lectures on Cauchy's Problem in Linear Partial Differential Equations* [Yale University Press, 1923, 324 pp.]. The main changes are introduced in Book IV, which contains, together with the older "method of descent" for the solution of Cauchy's problem, a direct method developed by the author in his memoirs of 1924. Another important change consists in the addition of three Appendices. Appendix 1 (*Forme invariante donnée à la solution*) treats of a representation of solutions in invariant form, in conformity with the methods of the modern tensor calculus. Appendix 2 (*Notions sur la résolution du problème mixte*) contains an account of researches by various authors, including the author of the book, on the mixed problem for hyperbolic equations, which plays a rôle almost of the same importance as the Cauchy problem itself. Appendix 3 (*Détermination du problème dans le cas non linéaire*) treats of the uniqueness problem for a hyperbolic equation of general type and for the elliptic equation with analytic coefficients. Here the author follows mainly the interesting researches of H. Lewy. All these additions increase considerably the value of this great work so well known in this country.

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