profession and the general biologist are adopting the methods and results of physico-chemical inquiry. The time seems to have really arrived when it is as necessary to point out the present limitations and tentative character of our methods and conclusions as to urge their more rapid extension to wider fields. The outsider who dips into physical chemistry for cut-and-dried methods to solve his own problems is dangerously apt to carry off a mere shell of formulas without realizing how highly specialized are the "simplifying conditions" upon which they are based. It is far too easy to overlook with what care the particular illustrations in our standard texts have been selected. The physico-chemical problems of biology and medicine are for the most part of a far more complicated character than any as yet systematically investigated in pure chemistry, and we must not be too easily satisfied with superficial analogies. It seems to be a trait of human nature to place most confidence in the results of those studies of which we know the least. Professor Cohen's book should certainly do much toward correcting this tendency in the field with which it deals. There seems at present a great need for just such border-line treatises as the book before us and particularly for those of perhaps even a more pointedly conservative standpoint. The impetus to the new movement has been well given; what it most needs now is careful guidance. F. G. COTTRELL.

TRAITÉ DE CHIMIE PHYSIQUE. LES PRINCIPES. BY JEAN PERRIN. Paris: Librairie Gauthier-Villars. Price, 15 francs.

M. Perrin's book is not by any means what the chemist would expect to find under such a title. Its guiding idea is better suggested by the opening phrase of the preface: "I have gathered together in this first volume the principles whose study and discussion seem to me to form a natural introduction to the different physical sciences." It is not surprising, then, to find that the first half of the book is really a treatise on mechanics and heat, made up largely of what we are accustomed to call mathematical physics, with here and there a paragraph on the chemical aspects of the matter in hand.

As suggested by the quotation above, the author promises more to follow. But he warns us against concluding that the succeeding volumes will be as abstract as the present one. The second is to treat of the application of the phase rule to pure substances and to

mixtures; also of the relations between composition and chemical properties. A further part will include the laws of "diluted matter," in the form of gas, or in solution; also electrochemistry. And a final part will treat of colloidal solutions and the chemical action of radiations.

Judging from the present volume, the work when completed will be one of great interest; for, although in the part before us there is a good deal which for the chemist can only be regarded as good discipline, there are also, here and there, many passages which are suggestive and stimulating; none the less so for the fact that the author's reasoning does not always carry conviction with it. Such is, for instance, that in which an attempt is made to give a more imaginable form to the idea of changes of entropy (Chapter V); and that in which the ordinary idea of forms of energy is discussed (Chapter IV).

The contents of the present volume will be sufficiently indicated by giving the headings of the nine chapters which compose it: I, The notion of force; II, The factors of action; III, The principle of equivalence and the notion of energy; IV, Rôle of the factors of action in the production of changes; V, The principle of evolution; VI, Characteristics of stable equilibrium; VII, Pure substances and laws of combination; VIII, Chemical potential; IX, The phase rule. It will be seen that the later chapters have a much more chemical complexion than the earlier ones; nevertheless the treatment throughout is abstract and mathematical, and will not appeal at all to those chemists to whom the calculus is a stumbling-block. To others this work will hardly fail to be interesting. A. P. SAUNDERS.

DETERMINATION OF RADICALS IN CARBON COMPOUNDS. BY H. MEYER. Authorized translation by J. BISHOP TINGLE. Second edition rewritten. New York: John Wiley and Sons. London: Chapman and Hall. xii + 162 pp. 12mo. Cloth. Price, $1.00.

The first edition of this little book was reviewed in this Journal, **22**, 50, and is already favorably known to organic chemists. The present edition contains over 20 per cent. of new matter, including several cuts. The author has cooperated with the translator in the work of revision. S. P. MULLIKEN.

LOIS GÉNÉRALES DE L'ACTION DES DIASTASES. PAR VICTOR HENRI. Paris: Published by Librairie Scientifique, A. Hermann.

This is a well-printed book of 129 pages devoted to a discussion of the general laws of the action of the diastases.