functions of position and time only." Clearly this is not what the author really means, since the principle stated is trivially true with $U_0 \equiv V_0 \equiv W_0 \equiv 0$.

In Chapter II it would be well to insert an explanation of the term "impact parameter," as this term is not used in any of a half dozen standard treatises on dynamics which a reader might consult. Although what may be taken as a strictly mathematical definition is given in Appendix I, equation 26, there is no explanation of the word "impact" nor is it clear without further discussion why the integrated average over the impact parameter must be weighted proportionally to the parameter (cf. the factor DdD in the formula (2.313) instead of simply dD).

The remarks inserted in the bibliography at the end of Chapter III (pp. 133, 134) involving the expansion of the potential function in a Taylor's series give a deceiving sense of generality. Evidently the results to be obtained by choosing the origin so that the linear terms disappear would be valid only in the neighborhoods of the presumably rather rare critical points, unless it were possible to prove that the Taylor's series had a large domain of convergence.

In Chapter IV (pp. 185, 186) it would be desirable to note that $\overline{U}$, $\overline{V}$, and $\overline{W}$ are identical respectively with U_0, V_0, and W_0; it would be equally desirable to indicate the well known relation existing between $\overline{U^2}$, $\overline{UV}$, and so on, U_0, U_0V_0, and so on, and the strain tensor.

In spite of these criticisms, the reviewer found the book to be extremely interesting, and he feels that it has reached the highest level of scientific merit.

DANIEL C. LEWIS

The mathematics of physics and chemistry. By H. Margenau and G. M. Murphy. New York, Van Nostrand, 1943. 12+581 pp. $6.50.

In this textbook Professor Margenau and Murphy have assembled a very useful collection of mathematical principles as applied in prewar fundamental research in physics and chemistry. Mathematicians may not, in general, be in sympathy with the authors' deliberate compromising of rigor of derivation to maintain an emphasis on applications. It is doubtful that the book will prove successful as a textbook without prerequisites including the conventional course in advanced calculus. On the other hand, it does fulfill a long standing need, particularly evident in smaller universities, for a textbook suitable as the basis for a mathematics course at this level for graduate students of physics and chemistry.

Chapters are devoted to thermodynamics, ordinary differential equations, special functions, vector analysis, coordinate systems, calculus of variations, partial differential equations of classical physics, eigenvalues and eigenfunctions, mechanics of molecules, matrices and matrix algebra, quantum mechanics, statistical mechanics, numerical calculations, linear integral equations and group theory.

An advanced course, based upon this text, for physicists and chemists, could afford to be supplemented by material on linear systems, transforms, approximate and asymptotic evaluating of integrals, and some elementary theory of acoustics and hydrodynamics.

Some illustrative problems are worked as examples, others, often supplementary to the text material, are included as student exercises. Typographical errors were fairly numerous in the first printing.

This book has been enthusiastically received by graduate students of physics, chemistry and mathematics, although not without criticism of certain sections. It has stimulated considerable interest in the topics covered.

PAUL C. CROSS

O sentido da nova lôgica. By Willard Van Orman Quine. São Paulo, Livraria Martins Editora, 1944. 252 pp.

This is a well organized exposition of modern formal logic addressed to the general philosophical reader. There is at the end a list of the principles most often referred to, a list of all the formal definitions (in symbolic notation), an extensive bibliography, and an alphabetical index. All these will help the studious reader who wishes to master the technique, but the book is not equipped with exercise material, nor designed for classroom drill. The style, at least up to the last chapter, is reasonably simple, with well chosen local illustrations and appropriate cautionary remarks. Rarely, except on questions of ontology, does the author present at length, and then dispose of, views opposed to his own. Throughout the text, generous but brief remarks attribute credit to previous workers.

Following an illuminating introduction, the text falls into four chapters: I Theory of composition, II Theory of quantification, III Identity and existence, IV Class, relation and number. In I, truth value tables (called "quadros") are treated in detail. This treatment covers the translation from everyday language to the more precise, symbolic notation. As distinguished from the "if-then" rule of composition of propositions, the author here, as previously, reserves "implication" to state a relation between propositions. If "$\sim(p \cdot \sim q)$," then "'p' implies 'q'," where 'p', 'q' are substantives, naming the