

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  $\bar{U}$ ,  $\bar{V}$ , and  $\bar{W}$  are identical respectively with  $U_0$ ,  $V_0$ , and  $W_0$ ; it would be equally desirable to indicate the well known relation existing between  $\bar{U}^2$ ,  $\bar{UV}$ , 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.

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*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 pre-war 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.