

The author employs the generalized theorem of Cauchy to formulate the generalized problem of Cauchy which, if solved, would effect the integration completely; to study singular solutions which he classifies according as they are simply, doubly, and so on to  $n$ -ply singular; and finally to investigate precisely the transformation which changes a system where the unknown is present into one where it is absent.

The theorem on the reduction to a single equation furnishes immediately a method of integration of linear systems, the method of Mayer, the simplest known. For the integration of non-linear systems the author presents the theory of the complete integral in the ordinary manner, but adds the solution of the problem of Cauchy by means of such an integral without the geometric considerations relative to characteristics.

The exposition of the method of Jacobi and Mayer is made without using any algebraic properties of the bracket expressions and without any reference to the presence or absence of the unknown; moreover Delassus shows that the method leads always to a complete integral. He finds finally the method of Lie as an immediate consequence of the above reduction theorem, and without raising any question relative to the unknown function.

A list of forty examples of simultaneous systems forms the second part of this most valuable contribution to the theory of the linear partial differential equation.

E. O. LOVETT.

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#### NOTES.

THE Chicago Section of the AMERICAN MATHEMATICAL SOCIETY will meet at the University of Chicago on Thursday and Friday, December 28 and 29 next. Titles and abstracts of papers to be read should be in the hands of the Secretary of the Section not later than December 12.

AMONG the officers of the American association for the advancement of science for the coming year are: Professor R. S. WOODWARD, Columbia University, president; Professor CHARLES BASKERVILLE, University of North Carolina, general secretary; Professor ASAPH HALL, JR., University of Michigan, vice-president of section A, mathematics and astronomy; Dr. W. M. STRONG, Yale University, secretary of section A.