

said, he was at times hardly able to master them ; and many of these ideas, especially those concerning elliptic functions, were never incorporated in memoirs.

This diary has now been given to the public by Professor Klein, who has enhanced its value very greatly by attaching to a large number of its entries explanatory notes pointing out their relation to other published or unpublished writings of Gauss. Professor Klein explains, however, that this publication is to be regarded as a preliminary one only, since the diary is to be printed, with a more extended commentary, in Volume X, of Gauss's Collected Works.

A portrait of Gauss at the age of twenty-six, which has never before been published, serves as frontispiece, and one of the pages of the diary is reproduced in facsimile.

MAXIME BÔCHER.

Zur Integration partieller Differentialgleichungen. DR. KARL BOEHM. Leipzig, Teubner, 1900. 8vo. 55 pp. Mk. 1.80.

THE above paper, printed in book form, deals exclusively with the formal solution of partial differential equations, and of systems of such equations, by means of series, the convergence of which is not investigated.

The author starts with a given equation, or set of equations, of any order, forms their successive derived equations, and counts the number of derivatives of highest order compared with the number of equations, at each stage. He then shows, for a single equation, that the given equation can be solved with respect to any exceptional* derivative, and finally that a power series expansion may be obtained for the solution, which will formally satisfy the given equation, when arbitrary constant values have been preassigned for certain suitable derivatives ; all this at a point where the equation is not "singular" with the respect to the exceptional derivative chosen. Similar results are obtained for a system of equations, under certain restrictions.

The work doubtless has real merit, but the reviewer does not feel justified in entering further into detail on account of the failure to discuss the convergence of the series in question : an omission which the author acknowledges in several places, and which renders the importance of the paper rather doubt-

* "Ausgezeichnet ;" the definition is too intricate to repeat here.