

## KLEIN'S EVANSTON LECTURES.

*The Evanston Colloquium*: Lectures on mathematics, delivered from Aug. 28 to Sept. 9, 1893, before members of the Congress of Mathematics held in connection with the World's Fair in Chicago, at Northwestern University, Evanston, Ill., by FELIX KLEIN. Reported by Alexander Ziwet. New York, Macmillan, 1894. 8vo. x and 109 pp.

THIS little volume occupies a somewhat unique position in mathematical literature. Even the *Commission permanente* would find it difficult to classify it and would have to attach a bewildering series of symbols to characterize its contents. It is stated as the object of these lectures "to pass in review some of the principal phases of the most recent development of mathematical thought in Germany"; and surely, no one could be more competent to do this than Professor Felix Klein. His intimate personal connection with this development is evidenced alike by the long array of his own works and papers, and by those of the numerous pupils and followers he has inspired. But perhaps even more than on this account is he fitted for this task by the well-known comprehensiveness of his knowledge and the breadth of view so characteristic of all his work.

In these lectures there is little strictly mathematical reasoning, but a great deal of information and expert comment on the most advanced work done in pure mathematics during the last twenty-five years. Happily this is given with such freshness and vigor of style as makes the reading a recreation. As the preface tells us, the twelve lectures here reproduced were given before twenty or more mathematicians from American colleges and universities, during the two weeks following the Chicago Congress of Mathematics last summer. Professor Klein had attended the Congress as official commissioner from Germany, and had contributed much to the success of that gathering. With the eager co-operation of a majority of the members of the Congress, he arranged the Colloquium at Evanston. This by no means easy task he undertook solely from love of his chosen science, and in the hope that thus he might contribute to the promotion of research in America in those parts of pure mathematics which at present engage the attention of the foremost European investigators. The noteworthy list of interested auditors prognosticates the realization of this hope. It is to the worker in special fields, and to the ambitious student, that these lectures will prove most useful. A complete review being in the nature of the case impossible, we shall present only briefly points of special interest.