

PICARD'S TRAITÉ D'ANALYSE.

Traité d'Analyse. By ÉMILE PICARD. Vol. I., 1891, pp. xii. + 457; Vol. II., 1893, pp. xiv. + 512. Paris, Gauthier-Villars.

ONE of the ablest of American mathematicians said to the writer not long ago, "we have waited fifty years for this book"! While neither the speaker's age nor the state of mathematical analysis would warrant one in taking this statement literally, it nevertheless expressed a feeling which must have been experienced during recent years by every student of analysis. A great many treatises having the above title, or one differing but little from it, have appeared, particularly in France and Germany, during the last twenty-five years or thereabouts, many of them good, some of them excellent—as for example Jordan's "Cours d'Analyse," while some had perhaps no really good reason for existence. None of these treatises though, however valuable they may have been, have filled or even attempted to fill the place which will be occupied by Picard's "Traité d'Analyse."

The necessity for a treatise on analysis which should present the subject from the modern point of view has for several years been most obvious. The extraordinary developments in the theory of functions, in differential equations, and in certain purely algebraical theories, and the important applications of the results of these developments to geometrical, physical, and astronomical problems, have made such a treatise almost indispensable. The difficulties caused by the magnitude and complexity of the subject might well deter any one from undertaking to give an account of it, so that any mathematician, whatever his merit, would probably be thanked if he had made a fair attempt in that direction. When, however, such a mathematician as M. Émile Picard undertakes the task more than ordinary gratitude is due. M. Picard is one of the very first analysts of the age, both as an original investigator and in virtue of the vast range of his knowledge; joined to these claims to be considered the proper person to write the *Traité d'Analyse* of to-day, he possesses a most remarkably clear and elegant style of presenting a subject, whether it be in the form of a memoir embodying the results of his own personal researches or in the form of a lecture or chapter containing an account of the researches of others. The elegance and conciseness of M. Picard are not, however, at the expense of rigor, as every reader of his work is aware, and as every student who has had the pleasure of listening to his lectures can testify.