

THE THIRD EDITION OF PICARD'S TRAITÉ

Traité d'Analyse. By Émile Picard. Troisième édition. Revue et augmentée avec la collaboration de Gaston Julia. Volume I. Paris, Gauthier-Villars, 1922. xvii+593 pp.

Professor Picard's *Traité d'Analyse* has for many years past been regarded as one of the classics of modern mathematical literature. It is therefore to be presumed that most of the readers of the BULLETIN are familiar with the second edition of the present volume, which appeared more than twenty years ago and was reviewed* at that time by the late Professor Bôcher. Hence the present review will be concerned only with the changes and additions that have been made in the third edition.

The additional material comprised in the present volume amounts to about one hundred and ten pages, nearly one-fourth the content of the first volume of the second edition. With the exception of a few pages on non-euclidean geometry added to part three, the additions are scattered through parts one and two, the great bulk of them being found in part two, and particularly in that portion of it which deals with trigonometric series.

In part one the additional material is found mainly in more complete discussions of certain standard topics already treated in earlier editions, such as the first and second laws of the mean, functions of bounded variation, and change of variables in double integrals. Aside from the introduction of this supplementary material, a number of changes in the exposition have been introduced in certain portions of the text.

Part two is devoted mainly to a discussion of potential theory and trigonometric series. As mentioned before, the additions are much more extensive than in part one, covering in all some eighty-two pages. Moreover, the changes in that portion of the text carried over from the second edition are much greater than in the case of part one. In those sections dealing with potential theory, the order of presentation has been considerably changed and much rewriting has been done. But it is the chapter dealing with trigonometric series (now Chapter X) that has undergone the most extensive alteration. This was to be expected, of course, since this is the particular topic of volume one whose theory has been most enriched by the researches of the past twenty years. The major portion of the new material introduced, is related to certain of these researches, and as only a few could be utilized in this fashion, it is interesting to note what choice Professor Picard

* Cf. this BULLETIN (2), vol. 8 (1901-02), p. 124.