proposed solutions upon wet and dry tobaccos, always with satisfactory results.

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SCIENTIFIC BOOKS.

Sur le développment de l'analyse et ses rapports avec diverses sciences. By EMILE PICARD. Paris, Gauthier-Villars. 1905.

In this little volume of 167 pages Professor Picard has republished the lectures which he came to America to deliver at the decennial celebration of Clark University in 1899 and at the St. Louis Congress of Arts and Science in 1904. The book thus has a special interest for American readers, but quite apart from this it will prove stimulating to all lovers of mathematics who feel the need from time to time of taking comprehensive views of the great divisions of their subject under the guidance of a master.

Parts of these lectures give information of a general character concerning some of the most recent advances in such subjects as the theory of differential equations and of algebraic functions of two variables, in both of which fields M. Picard is one of the leading workers. These sections, which necessarily presuppose a considerable mathematical training on the part of the reader, have been brought down to date by footnotes added since the lectures were delivered. They would be even more useful than they are if provided with more precise bibliographical references. Other sections will be found accessible to readers of much less mathematical attainment, and we can not indicate the kind of inspiration and enjoyment to be derived from them better than by giving a few typical quotations.

Without wishing to generalize too much, it may be said that mistakes are sometimes useful, and that during really creative periods an incomplete or approximate truth may be more fruitful than the same truth accompanied by the necessary restrictions (p. 5).

After having explained that it is not always wise to restrict one's attention to analytic functions (that is to functions which may be developed by Taylor's theorem) in spite of the fact that these functions are in a certain sense sufficiently general for all 'practical' purposes and that their theory forms an elegant mathematical system complete in itself, the author goes on:

In general, let us admire highly systematized theories, but let us distrust a little their scholastic appearance which is in danger of stifling the inventive impulse (p. 30).

In speaking of the development of mechanics in the eighteenth century the author says:

Formal mathematical developments played at that time the main part; and the language of analysis was indispensable for the greatest development of these principles. There are moments in the history of science, and perhaps of society, when the mind is upheld and carried forward by the words and symbols which it has created, and when generalizations present themselves with the least effort (p. 131).

True rigor is fruitful, and is thereby distinguished from another kind of rigor, purely formal and tiresome, which casts a shadow on the problems which it touches (p. 148).

Those who had the privilege of hearing M. Picard when he was in America will miss from this volume only the charm of the spoken word, while finding there all the attractive qualities of style for which the author is so justly noted.

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SCIENTIFIC JOURNALS AND ARTICLES.

THE May number of the *Botanical Gazette* contains the following papers: A. D. E. Elmer contributes his third paper on 'New and Noteworthy Western Plants,' describing numerous new species from California; J. Y. Bergen discusses certain strand plants about the Bay of Naples, chiefly in reference to the toxic effect of sodium chloride, and shows wide variation in this regard; H. D. House describes with the help of illustrations new and noteworthy North American species of clover; Charles E. Lewis describes the basidium of *Amanita bisporigera,* having traced the nuclear divisions in connection with spore-formation. The number closes with the usual full review of current literature.