The *Catalogue* of the exhibition in London is much more attractive in every way. The notes for the 691 entries are more profuse and the additional material is of special interest. There were quite a number of items neither manuscript nor printed.

The verse of Dodgson has been collected in a single volume with an introduction by J. F. McDermott (New York, 1929). Much of this verse has been set to music,* some of which is to be found on phonographic records. The number of mathematicians who have written verse, or dramas, is quite large. But the number of those who have produced a great effect on their country's literature, like Lewis Carroll in the writing of nonsense, is exceedingly small.

R. C. ARCHIBALD

PICARD ON CURVES AND SURFACES

Quelques Applications Analytiques de la Théorie des Courbes et des Surfaces Algébriques. By M. Emile Picard. Paris, Gauthier-Villars, 1931. viii +224 pp.

This volume is published as Fascicule 9 of the *Cahiers scientifiques.* It contains the course given at the Sorbonne in 1930. The first chapters discuss Abelian integrals and the problem of inversion for $p=1$ and $p>1$. After mentioning the theorem of Jacobi that a single-valued function in one variable can have no more than two distinct periods, the corresponding theorem for two variables is proved. Its statement is that a single-valued function of two variables can have no more than four pairs of distinct periods. Furthermore, it is proved that if one imposes upon a quadruply periodic function the condition of being rational at any finite point, there necessarily exists a relationship bebetween the four pairs of periods. A set of equations expressing this relationship is found.

Chapter 3 mentions the known theorems (a) that the coordinates of a point of an algebraic curve of genus zero are expressible as rational functions of a single parameter, (b) that the coordinates of a point of a curve of genus one are expressible by doubly periodic functions which are meromorphic at any finite point. In these two cases, the functions which give the parametric representation have only isolated poles or singular points throughout the whole plane. Then follows the more general theorem due to Poincaré, (c) that the coordi nates of any point of an algebraic curve can be expressed by single-valued functions of a single parameter, but when the genus is greater than one, the essential singularities of these functions are no longer isolated.

The solution of the differential equation

$$F\left(u, \frac{du}{dz}\right) = 0,$$

which possesses a meromorphic integral at any finite point of the plane, requires nothing but exponential functions and doubly periodic functions. The solution of

* The work of Williams and Madan lists (pp. 263–281) nearly 70 "dramatizations and musical settings" of Carroll's *Alice* and verse.