18. In this paper Dr. Lennes describes in detail the construction of a set which is non-measurable in the sense of Lebesgue. The general method is the same as that used by Van Vleck (*Transactions,* volume 9, page 237), but each step is made to depend upon explicitly formulated postulates.

19. In two papers published in the *American Journal of Mathematics,* volume 33, Dr. Lennes formulated a certain body of theorems on polygons and polyhedrons. With one exception these were confined to figures having a finite number of sides or faces. In the present paper many of the results obtained in these papers are extended to polygons and polyhedrons having an infinite number of sides or faces.

F. N. COLE,
Secretary.

PROOF OF A THEOREM DUE TO PICARD.

BY PROFESSOR W. R. LONGLEY.

(Read before the American Mathematical Society, April 27, 1912.)

CONSIDER the ordinary differential equation of the first order and second degree

$$(1) \qquad Ap^2 + 2Bp + C = 0 \qquad (p = dy/dx),$$

in which the coefficients are power series in x and y vanishing when $x = y = 0$

$$(2) \qquad A = ax + a_1y + \cdots, \quad B = bx + b_1y + \cdots, \quad C = cx + c_1y + \cdots.$$

Picard has proved that in the general case* every integral curve (real curve in the cartesian plane) of equation (1) which comes infinitely near the origin, actually reaches the origin with a determinate tangent. The proof† is based upon the existence of an analytic integral curve passing through the origin, a condition which is satisfied in the general case. But such a curve does not always exist, and the following proof, which

* By the general case it is meant that there exists no particular relation of equality among the coefficients of (2).

† Picard, *Comptes Rendus*, vol. 120 (1895) p. 524; *Math. Annalen*, vol. 46 (1895), p. 521; Traité d'Analyse, vol. 3, pp. 217–225.