$\mathfrak{B}^m$. The system of neighborhoods $\mathfrak{B}^m$ for fixed m covers $\mathfrak{Q}$ and may be replaced by a finite subsystem,

$$\mathfrak{B}^{m1}, \quad \mathfrak{B}^{m2}, \ldots \mathfrak{B}^{mk};$$

such that each point of $\mathfrak{Q}$ is interior to some class $\mathfrak{B}^{mk}$ and each class $\mathfrak{B}^{mk}$ is a neighborhood of a point Q^{mk} of the class $\mathfrak{Q}$. Let $\mathfrak{C}$ be the class of all points Q^{mk}. Since every point P of $\mathfrak{Q}$ is interior to some set $\mathfrak{B}^{mk}$, it follows from condition (4) that Q^{mk} is contained in the neighborhood $\mathfrak{B}^m$ of P. Therefore P is a limiting point of the class $\mathfrak{C}$.

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This article was in type before the writer learned of the existence of an article by Fréchet (*Bulletin de la Societé mathématique de France*, volume 35, 1917), in which it is shown that the *closure* of *derived classes* is a consequence of the Heine-Borel property in the case of a general system $\mathfrak{K}$. Theorem 3 of the present paper is a generalization of this result.

E. W. CHITTENDEN.

INTEGRALS AROUND GENERAL BOUNDARIES.

BY PROFESSOR P. J. DANIELL.

THE concept of a boundary integral has been extended to curves of the type $x = x(t)$, $y = y(t)$, where $x(t)$, $y(t)$ are absolutely continuous functions of a parameter t. In this case the curves are more or less simple and have tangents "nearly everywhere." In applications to physics however the boundary must be considered rather as a boundary of a set (in the sense of the theory of point sets). The boundary will be, in general, a collection of points without definite tangents at all. This paper sets out a method by which such boundary integrals can be defined under certain restrictions placed on the two integrand functions u, v. The method depends on the concept of absolutely additive functions of sets.* The writer believes that these restrictions could be lightened and that there is a wide field here for further investigation.

* J. Radon, *Wiener Sitzungsberichte*, vol. 122 (1913), p. 1295. W. H. Young, *Proceedings London Math. Society*, vol. 13 (1914), p. 109.