If now p is Fréchet interior to $\mathfrak{S}$ and is a limiting element of $\mathfrak{T}$ a subclass of $\mathfrak{R}$, then, by definition of Fréchet interior, limiting element, and L^2, $\mathfrak{S}$ contains an infinity of elements of $\mathfrak{T}$. Therefore p is interior to $\mathfrak{S}$ in the sense of § 1. Furthermore if p is interior ($\mathfrak{R}$) to $\mathfrak{S}$ in the sense of § 1, then $\mathfrak{S}$ contains an element q (distinct from $\mathfrak{P}$) of every subclass $\mathfrak{T}$ of $\mathfrak{R}$ for which p is a limiting element. Then if $p = L_n r_n$ (distinct) p is a limiting element of the class $[r_n]$. Hence $\mathfrak{S}$ contains r_{n_1} distinct from p. Since p is a limiting element of the class obtained from $[r_n]$ by removing r_{n_1} (L^2) it is evident that at most a finite number of elements of $[r_n]$ are not in $\mathfrak{S}$. Therefore $[r_n]$ is ultimately contained in $\mathfrak{S}$.

T. H. Hildebrandt* has given a definition of interior ($\mathfrak{R}$) which becomes equivalent to the Fréchet interior ($\mathfrak{R}$) for systems ($\mathfrak{P}$; L^{123}). This definition omits the condition that the sequence $\{r_n\}$ consist of distinct elements. If then $p = L_n r_n$ and r_{n_0} is repeated infinitely often, in a system ($\mathfrak{P}$; L^{123}), $r_{n_0} = p$. That r_{n_0} is contained in any class $\mathfrak{S}$ to which p is Fréchet interior ($\mathfrak{R}$) is evident. A restatement of Theorem IV for systems ($\mathfrak{P}$; L^{123}) gives us a generalization of a theorem of Hildebrandt.†

URBANA, ILL.,
October 28, 1914.

COMPLETE EXISTENTIAL THEORY OF SHEFFER'S POSTULATES FOR BOOLEAN ALGEBRAS.

BY PROFESSOR L. L. DINES.

(Read before the American Mathematical Society, December 30, 1913.)

IN a recent number of the *Transactions* Sheffer‡ presented an elegant and concise set of five postulates for Boolean algebras, and proved them mutually consistent and independent. Professor E. H. Moore§ has suggested a further interesting problem in connection with such sets of postulates, namely the determination of all general implicational relations

* Loc. cit., p. 268 (10).

† Loc. cit., p. 282 (2).

‡ H. M. Sheffer, "A set of five postulates for Boolean algebras with application to logical constants," *Transactions*, vol. 14 (1913), pp. 481–488.

§ E. H. Moore, "Introduction to a form of general analysis," New Haven Mathematical Colloquium, Yale University Press, page 82.