$$v_n(x) = \frac{\Gamma[(1-x)n+1]}{\Gamma(1+n)};$$

the Mittag-Leffler convergence factor:

$$v_n(x) = \frac{1}{\Gamma(1+nx)};$$

and the Dirichlet series convergence factors:

$$v_n(x) = e^{-\lambda(n)x},$$

where $\lambda(n)$ must be a logarithmico-exponential function of n which tends to infinity with n but not as slowly as log n nor faster than n^Δ, where Δ is any constant however large.

NORTHWESTERN UNIVERSITY

A THEOREM ON SYMMETRIC DETERMINANTS

BY W. V. PARKER

1. *Introduction.* In a recent paper* the writer proved the following theorem.

If $D=|a_{ij}|$ is a real symmetric determinant of order n, $n>5$, in which $a_{ii}=0$, $(i=1, 2, \cdots, n)$, and M is any principal minor of D of order $n-1$, then if all fourth order principal minors of M are zero, D vanishes.

The purpose of the present note is to establish a second theorem of a similar nature which applies to complex as well as to real determinants. It will be shown also that when a_{ij}, $(i\neq j)$, $(i,j=1,2, \cdots, n)$, is real and different from zero the conditions of this second theorem imply those of the above.

2. *A Second Theorem.* The theorem with which this note is concerned may be stated as follows.

THEOREM. *If $D=|a_{ij}|$ is a symmetric determinant of order n, $n>5$, in which $a_{ii}=0$, $(i=1, 2, \cdots, n)$, and M is any principal minor of D or order $n-1$, then if all fourth order principal minors of D, which are not minors of M, are zero, D vanishes.*

---

* This Bulletin, vol. 38 (1932), p. 259.