the connected point sets B_n and B_m have no point in common, there clearly exists no point set consisting of a finite number of connected subsets of M and separating G from A in M.

THE UNIVERSITY OF CHICAGO

A THEOREM ON PLANE CONTINUA*

BY W. T. REID

1. *Introduction.* In this paper the following theorem is proved.

THEOREM. *If M is a plane continuum, and K is a proper subcontinuum of M, then at least one component of $M-K$ has a limit point in K.*

Two points sets are *mutually separated* if they are mutually exclusive and neither of them contains a limit point of the other. A point set is said to be *connected* if it is not the sum of two non-vacuous mutually separated point sets. A point set which is both connected and closed is a *continuum*. A *component* of a point set N is a connected subset of N which is not a proper subset of any other connected subset of N. The set of all points in the plane will be denoted by S.†

2. *Proof of the Theorem.* If M is a bounded continuum and K is a proper subcontinuum of M, it is well known that every component of $M-K$ has a limit point in K.‡ If M is unbounded then it is no longer true that *every* component of $M-K$ has a limit point in K.§

If K is a bounded subcontinuum of an unbounded plane continuum M, then the above theorem may be proved readily. For

---

* Presented to the Society, December 28, 1934. The result of this paper was obtained in 1928, while the author was a student under R. L. Moore at the University of Texas. Recently both R. L. Moore and J. H. Roberts have proved results beyond that of the present paper and have suggested that I publish my original result.

† These definitions are those customarily used in point set theory. See, for example, R. L. Moore, *Foundations of Point Set Theory*, Colloquium Publications of this Society, vol. 13. For brevity, this treatise will be referred to as "Moore."

‡ See, for example, Moore, p. 24.

§ See Moore, p. 25, example 2.