in the case of algebraic closure there is a stronger result of Hollkott (Hamburg): the axiom of choice is sufficient for the existence and uniqueness of algebraic closure.

An essential simplification is made possible for Baer's† theory of the degree of algebraic extensions. I plan to show elsewhere how the generalized continuum hypothesis may be avoided.

YALE UNIVERSITY

CONCERNING TWO INTERNAL PROPERTIES OF PLANE CONTINUA‡

BY R. E. BASYE

Theorem 1 below was suggested to me by R. L. Moore. Theorem 2 is an extension of Kuratowski's result§ that if three compact plane continua have a point in common and their sum separates a point A from a point B in the plane, then there exists a pair of these continua whose sum separates A from B in the plane. Another extension of this result along combinatorial lines has been given‖ by Čech.

THEOREM 1. *Let H and K be two mutually exclusive and closed subsets of a compact continuum M which lies in the plane. If for each pair of points A and B in H and K, respectively, there exists a finite collection Γ_{AB} of continua in M such that Γ_{AB}^* separates A from B in M, then there exists a finite collection Γ of continua in M such that Γ^* separates H from K in M.*

Let $\epsilon_1, \epsilon_2, \cdots$, be a sequence of positive numbers converging monotonically to zero, with ϵ_1 less than half the distance from H to K. For each i let D_H^i be a domain containing H such that (1) the boundary β_H^i of D_H^i is the sum of a finite number of mutually exclusive simple closed curves, and (2) each point of

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† *Eine Anwendung der Kontinuumhypothese in der Algebra.* Journal für Mathematik, vol. 162.

‡ Presented to the Society, April 6, 1935, under a somewhat different title.

§ Kuratowski, *Théorème sur trois continus*, Monatshefte für Mathematik und Physik, vol. 36 (1929), pp. 77–80.

‖ E. Čech, *Trois théorèmes sur l'homologie*, Publications de la Faculté des Sciences de L'Université Masaryk, No. 144, 1931, pp. 1–21.