sults in an important field, which will inspire and stimulate further research.

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Structure of Algebras. By A. Adrian Albert. (American Mathematical Society Colloquium Publications, vol. 24.) New York, American Mathematical Society, 1939. 11+210 pp.

The study of algebras has been one of the most significant features of the present period in the history of mathematics; and in the theory of algebras a monument has been erected recording some of the characteristic traits of contemporary mathematical thought.

One may say that algebras have been pushed into the centre of attention by the publication of Dickson's *Algebras and their Arithmetics*; and from that moment on they have kept the interest of the mathematical public. In the meantime a great number of the problems has been solved, methods have been streamlined so that a moment propitious for the survey of the results has arrived. One of the principal actors in the movement has given an account of its results. The mathematical public certainly will be grateful for his effort, as he has been able to capture the inherent beauty of the theory of algebras and to communicate it to the reader.

The book may be divided roughly into two parts, the first being concerned with the general theory, the second containing applications to related problems. It should be mentioned at once that the theory of representations has been "put in its place"; that is, it appears as an application of the general theory and has not been used for the derivation of the results of the general theory.

The general theory of algebras may be defined as that part of the theory in which no special restrictions are imposed upon the field of reference. There are two main topics of discussion. The first is the reduction to simple algebras and the second the discussion of the simple algebras themselves.

The reduction theory proceeds in two steps. One shows first the existence of a radical and the semisimplicity of the algebra modulo its radical. This semisimple difference algebra may be represented by some subalgebra of the original algebra, provided the difference algebra stays semisimple under every scalar extension (this result belongs to a later phase of the theory, since changes of the field of reference have to be considered). But since both the investigation of nilpotent algebras and of the possible extensions of a nilpotent alge-