

ABSTRACTS OF PAPERS

SUBMITTED FOR PRESENTATION TO THE SOCIETY

The following papers have been submitted to the Secretary and the Associate Secretaries of the Society for presentation at meetings of the Society. They are numbered serially throughout this volume. Cross references to them in the reports of the meetings will give the number of this volume, the number of this issue, and the serial number of the abstract.

ALGEBRA

178. Reinhold Baer: *A theory of crossed characters.*

If G is a finite group, C a homomorphism of G into the group of automorphisms of the cyclic group E , then a C -character of G is any single valued G to E function $f(x)$ satisfying the functional equation: $f(uv) = f(u)f(v)$ for u, v in G where the exponent v indicates the automorphism upon which the element v is mapped by C . The C -characters of G form a finite abelian group; and it is the object of a theory of crossed characters to find conditions assuring the possibility of establishing a partial or complete duality between G and its C -character group. (Received April 23, 1943.)

179. Reinhold Baer: *Radical extensions and crossed characters.*

An m -extension of the field F is a finite, normal and separable extension of F which is obtained by adjoining to F m th roots of elements in F . A theory of these extensions may be obtained by applying the theory of crossed characters on the Galois group of these extensions. (Received April 23, 1943.)

180. C. J. Everett: *Closure operators and galois theory in lattices.*

Every $*$ -closure ($A^* \supseteq A$; $A \subseteq B$ implies $A^* \subseteq B^*$) on a partially ordered set arises from a galois correspondence between P and some partially ordered set Q . Every galois correspondence between complete lattices of subsets of two sets results from a binary relation on all elements of the two sets. Every closure on a complete lattice P of subsets of a set is extensible to all subsets; if $(A \cup B)^* = A^* \cup B^*$ in P , the extension is also topological, for P a boolean algebra. Every closure on all subsets of a set is defined by a binary relation. A generalization of Krull's topology for algebraic fields is obtained and used to characterize the regularly closed subspaces of the linear functional space of a Banach space. Necessary and sufficient conditions are given for the existence of a topology in a group on whose subgroup lattice a $*$ -closure is defined, such that a subgroup is $*$ -closed if and only if it is closed in the topology. This is combined with results of Baer on primary groups to characterize topologically the subgroups closed under the galois correspondence between P and its automorphism group, A . Krull's method converts A into a metric, totally disconnected, topological group. (Received May 29, 1943.)

181. Irving Kaplansky: *Solution of the "problème des ménages."*

The "problème des ménages" asks for the number of ways of seating n husbands and n wives at a circular table, men alternating with women, so that no husband