

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.

82. Dr. Reinhold Baer: *The subgroup of the elements of finite order of an abelian group.*

Denote by $F(A)$ the subgroup of all the elements of finite order of the abelian group A . Then, if F is an abelian group whose elements are of finite order and J an abelian group without elements $\neq 0$ of finite order, the direct sum $A = F + J$ satisfies: $F(A) \sim F$, $A/F(A) \sim J$. $F + J$ is essentially the only group satisfying these conditions if, and only if, $F(A)$ is a direct summand of every abelian group A such that $F(A) \sim F$, $A/F(A) \sim J$. The pairs of groups F , J with this property are characterized by a simple relation between the structure of F and the structure of J . (Received January 24, 1936.)

83. Professor Clifford Bell: *On a theorem in higher plane curves.*

In Hilton's *Higher Plane Curves* the function $F(t) \equiv |f(t)\phi'(t)\psi''(t)|$ appears in a theorem concerning the cusps and inflections of a plane curve which is represented parametrically by the equation $x:y:z = f(t):\phi(t):\psi(t)$. The theorem states that if f , ϕ , ψ satisfy certain conditions, the cusps are given by the repeated roots of $F(t) = 0$, while the inflections are given by the single roots. In this note, making use of the Plücker numbers, a proof of the theorem is given which leads to additional information about the repeated roots. (Received January 6, 1936.)

84. Professor Salomon Bochner and Dr. W. T. Martin (National Research Fellow): *Singularities of composite functions in several variables.*

A generalization to functions in several variables is formulated for the classical theorem of Hadamard on the composition of singularities and stars of regularity. The generalization involves an alternative restatement of the classical theorem itself. (Received January 20, 1936.)

85. Professor A. D. Campbell: *A note on primitive roots in a Galois field.*

By using the condition that a primitive irreducible n -ic modulo p of the form $X^n - A_1X^{n-1} - A_2X^{n-2} - \dots - A_{n-1}X - A_n = 0$ must not divide $X^m - 1$