

ABSTRACTS OF PAPERS

SUBMITTED FOR PRESENTATION TO THIS 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.

119. Dr. Leo Zippin (National Research Fellow): *On the Rutt-Nöbeling theorem.*

A new and thoroughly independent proof is given that a locally compact continuous curve C , containing two points x and y such that no N points of C separate x and y , contains at least $N+1$ independent arcs xy . The proof is preferred to that recently published by Nöbeling (in vol. 18 of the *Fundamenta Mathematicae*, of which advance reprints have just been received) because (1) it is thoroughly inductive, although it has been commonly held that no inductive proof is here possible, (2) it is independent of the Menger " n -Bein Satz" to which the Nöbeling argument is reduced, and therefore gives a new proof of this theorem also, (3) it extends the field of the theorem to locally compact spaces, (4) the proof is much simpler certainly than the combined Menger-Nöbeling papers. The extension to locally compact spaces has this peculiar interest that it strikingly facilitates an induction, which in compact spaces might not be suspected. (Received March 17, 1932.)

120. Dr. Oscar Zariski: *A topological theorem on algebroid singularities.*

The intersection of an algebroid singularity, given by its Puiseux expansion $y=y(x)$, with the boundary of the 4-cell $|x|<\text{const.}$, $|y|<\text{const.}$, is stereographically projected into a knot of ordinary space. These knots have been described by K. Brauner, who also gave the generating relations of their fundamental group. That two distinct singularities give rise to distinct knots has been proved by O. Schreier for the particular case in which both knots lie on a torus (singularities of genus 1). The purpose of the present paper is to prove the following general theorem: *If two algebroid singularities are distinct from the algebro-geometric point of view, i.e., if the characteristic numbers which occur in their respective Puiseux expansions are distinct, then they are also topologically distinct, and their fundamental groups are not isomorphic.* (Received March 7, 1932.)

121. Mr. F. G. Dressel: *A generalized boundary value problem for the heat equation.*

Taking the fundamental region as a rectangle, let G_1, G_2 be functions of limited variation along the respective vertical sides of the rectangle, vanishing