

## PREFACE

The following pages contain a series of lectures on abstract set theory given at the University of Notre Dame during the Fall Semester 1957-58. After some historical remarks the chief ideas of Cantor's theory, now usually called the naive set theory, are explained. Then the axiomatic theory of Zermelo-Fraenkel is developed and some critical remarks added. In particular the set-theoretic relativism is emphasized as a natural consequence of the application of Löwenheim's Theorem on the axioms of set theory. Other versions of axiomatic set theory which logically are of very similar character are not dealt with. However, the simple theory of types, Quine's theory and the ramified theory of types are treated to a certain extent. Also Lorenzen's operative mathematics and the intuitionist mathematics are outlined. Further, there is a short remark on the possibility of finitist mathematics in a strict sense and finally some hints are given about the possibility of a set theory based on a logic with an infinite number of truth values.

The book "Transfinite Zahlen" by H. Bachmann has been very useful in particular for the writing of parts 6 and 8.

Some references to the literature on these subjects occur scattered in the text, but no attempt has been made to set up a complete list. Such a task seems indeed scarcely worth while, because very extensive and complete lists can be found both in the mentioned book of Bachmann and in the book "Abstract Set Theory" by A. Fraenkel.

Th. Skolem.