## CONTENTS

**SUMMARY** .......................................................... 1

**I. THE \( \lambda \)-SYSTEM** ........................................ 3

1. The Situation in the Theory of Inductive Methods .................. 3

2. Our Task: The Construction of a Continuum of Inductive Methods .. 7

3. Preliminary Explanations ........................................ 9

4. The Characteristic Function of an Inductive Method ............... 11

5. A Characteristic Function Gives a Complete Characterization .... 16

6. Methods of Estimation .......................................... 18

7. The Empirical Factor and the Logical Factor ..................... 22

8. An Interval for Values of \( G \) .................................. 25

9. The \( \lambda \)-Functions ........................................ 27

10. A \( \lambda \)-Function Gives a Complete Characterization ........... 30

11. Inductive Methods of the First Kind: \( \lambda \) Is Independent of \( \kappa \) .. 32

12. The Nonextreme Methods ...................................... 33

13. The First Extreme Method: \( \lambda = \infty \) ....................... 37

14. The Second Extreme Method: \( \lambda = 0 \); the Straight Rule ...... 40

15. Inductive Methods of the Second Kind: \( \lambda \) Is Dependent upon \( \kappa \) .. 44

16. The Difference between the Two Kinds of Inductive Methods ...... 47

17. Complete Inductive Methods .................................. 51

18. The Choice of an Inductive Method ............................ 53

**II. COMPARISON OF THE SUCCESS OF INDUCTIVE METHODS** ........ 56

19. Sampling Distributions ........................................ 56

20. The Mean Square Error as a Measure of Success .................. 59

21. The Mean Square Error with Respect to All \( Q \)-Properties ....... 65

22. The Optimum Inductive Method for a Given State-Description .... 68

23. Are Unbiased Estimate-Functions Preferable? .................... 73

24. The Problem of the Success in the Actual Universe ............... 75

**APPENDIX** ....................................................... 81

25. Wald's Theory of Decision Functions and the Minimax Principle .. 81

**INDEX** .......................................................... 91