TABLE OF CONTENTS

Preface iii

Chapter I. Elements of the theory of permutation groups 1
§1. Properties of mappings 1
§2. Transitivity 4
§3. Imprimitivity 7
§4. Permutation groups having a regular normal subgroup. Primitive solvable groups 15
§5. Nilpotent and locally nilpotent permutation groups 27

Chapter II. The general linear group 35
§6. Definitions. Prelininary propositions 35
§7. Endomorphisms 38
§8. Matrix representations of an endomorphism 44
§9. The Dieudonné determinant 52
§10. Normal subgroups of $GL(M)$ 58

Chapter III. The normal structure of the groups $GL(\Delta)$ and $GL(n, Z)$, $n > 2$ 64
§11. Normal subgroups of the infinite general linear group 64
§12. Normal subgroups of $GL(n, Z)$, $n > 2$. Subgroups of finite index 70

Chapter IV. Reducibility and imprimitivity 83
§13. Abelian groups with operators. The structure of semisimple algebras 83
§14. Linear representations. Reducibility and irreducibility of linear groups 90
§15. Primitivity and imprimitivity 103
§16. On normal subgroups of completely reducible groups 112
§17. Some conditions for complete reducibility of a linear group over a field 119

Chapter V. Solvable matrix groups 125
§18. Reducible solvable groups 125
§19. Primitive solvable groups. Boundedness of the length of the derived series of a solvable linear group 129
§20. Maximal primitive solvable subgroups of the general linear group 137
§21. Solvable matrix groups over a finite field 157
§22. Miscellany 168

Chapter VI. Periodic linear groups 177
§23. Finiteness conditions for linear groups. Local finiteness of a matrix group over a field 177

§24. Existence of an abelian normal subgroup of finite index in a periodic linear group over the field of complex numbers 186
§25. Sylow subgroups of the general linear group 191
§26. Structure theorems on periodic matrix groups over a field 202

Chapter VII. Nilpotent and locally nilpotent matrix groups 205
§27. Irreducible nilpotent matrix groups 205
§28. Irreducible locally nilpotent matrix groups 216
§29. Reducible locally nilpotent groups 222

Bibliography 242

Subject Index 251