

CONTENTS

CHAPTER	PAGE
I. INTRODUCTION TO GENERAL TOPOLOGY.....	1
1. Primitive concepts.....	1
2. Topological spaces.....	5
3. Aggregates of sets. Coverings. Dimension.....	13
4. Connectedness.....	14
5. Compact spaces.....	17
6. Separation axioms.....	23
7. Inverse mapping systems.....	31
8. Metrization.....	33
9. Homotopy. Deformation. Retraction.....	39
II. ADDITIVE GROUPS.....	41
1. General properties.....	41
2. Generators of a group.....	49
3. Limit-groups.....	54
4. Group multiplication.....	59
5. Characters. Duality.....	63
6. Vector spaces.....	72
III. COMPLEXES.....	88
1. Complexes. Definitions and examples.....	89
2. Homology theory of finite complexes. (a) Generalities.....	98
3. Homology theory of finite complexes. (b) Integral groups.....	101
4. Homology theory of finite complexes. (c) Arbitrary groups of coefficients.....	105
5. Application to some special complexes.....	109
6. Duality theory for finite complexes.....	116
7. Linking coefficients. Duality in the sense of Alexander.....	124
8. Homology theory of infinite complexes.....	127
9. Augmentable and simple complexes.....	130
IV. COMPLEXES: PRODUCTS. TRANSFORMATIONS. SUBDIVISIONS.....	134
1. Products of complexes.....	134
2. Products of chains and cycles.....	137
3. Set-transformations.....	143
4. Chain-mappings.....	145
5. Chain-homotopy.....	152
6. Complements.....	159
7. Subdivision. Derivation. Partition.....	162
V. COMPLEXES: MULTIPLICATIONS AND INTERSECTIONS. FIXED ELEMENTS. MANIFOLDS.....	173
1. Multiplications.....	173
2. Intersections.....	178
3. Coincidences and fixed elements.....	191
4. Combinatorial manifolds.....	196
VI. NETS OF COMPLEXES.....	213
1. Definition of nets and their groups.....	213
2. Duality and intersections.....	218
3. Further properties of nets.....	220

CHAPTER	PAGE
4. Spectra.....	229
5. Application to infinite complexes.....	232
6. Webs.....	233
7. Metric complexes.....	239
VII. HOMOLOGY THEORY OF TOPOLOGICAL SPACES.....	244
1. Homology theory: foundations and general properties.....	244
2. Relations between connectedness and homology.....	257
3. Groups related to webs.....	262
4. Groups related to the union and intersection of two sets.....	266
5. The Vietoris homology theory for compacta.....	271
6. Reduction of the Vietoris theory to the Čech theory.....	273
7. Homology theories of Kurosch and Alexander-Kolmogoroff.....	278
VIII. TOPOLOGY OF POLYHEDRA AND RELATED QUESTIONS.....	287
1. Geometric complements.....	287
2. Homology theory.....	293
3. Geometric manifolds.....	302
4. Continuous and singular complexes.....	307
5. Coincidences and fixed points.....	318
6. Quasi-complexes and the fixed point theorem.....	322
7. Topological complexes.....	327
8. Differentiable complexes and manifolds.....	330
9. Group manifolds.....	335
10. Nomenclature of complexes and manifolds.....	341
APPENDIX.....	344
A. On homology groups of infinite complexes and compacta. By Samuel Eilenberg and Saunders MacLane.....	344
B. Fixed points of periodic transformations. By P. A. Smith.....	350
BIBLIOGRAPHY.....	374
INDEX OF SPECIAL SYMBOLS AND NOTATION.....	381
INDEX.....	383