

Table of Contents

Part I The Beginning of Combinatorial Group Theory

I.1	Introduction to Part I	3
I.2	The Foundations: Dyck's Group-Theoretical Studies	5
I.3	The Origin: The Theory of Discontinuous Groups	11
I.4	Motivation: The Fundamental Groups of Topological Spaces	14
I.5	The Graphical Representation of Groups	22
I.6	Precursors of Later Developments	29
	A. Arithmetically Defined Linear Groups in Higher Dimensions	30
	B. Arithmetically Defined Linear Groups in Two Dimensions	34
	C. Geometric Constructions. Fuchsian Groups	38
	D. Braid Groups and Mapping Class Groups	39
	E. Differential Equations, Linear Groups, and Lie Groups	40
	F. Finite Groups	44
I.7	Summary	51
I.8	Modes of Communication. Growth and Distribution of Research in Group Theory	58
I.9	Biographical Notes	68
I.10	Notes on Terminology and Definitions	71
I.11	Sources	75

Part II The Emergence of Combinatorial Group Theory as an Independent Field

II.1	Introduction to Part II	79
II.2	Free Groups and Their Automorphisms	81
II.3	The Reidemeister–Schreier Method	91

II.4	Free Products and Free Products with Amalgamations	102
II.5	One-Relator Groups	113
II.6	Metabelian Groups and Related Topics	122
	A. The Principal Ideal Theorem	124
	B. Applications to the Theory of Knots and Links	134
	C. A Problem from the Foundations of Geometry	136
	D. Notes on Later Developments and Generalizations	138
II.7	Commutator Calculus and the Lower Central Series	141
II.8	Varieties of Groups	157
II.9	Topological Properties of Groups and Group Extensions	162
II.10	Notes on Special Groups	175
II.11	Postscript: The Impact of Mathematical Logic	181
II.12	Modes of Communication	187
II.13	Geographical Distribution of Research and Effects of Migration	193
II.14	Organization of Knowledge	200
	Bibliography	207
	Index of Names	227
	Index of Subjects	231