

Contents

Preface	vii
Chapter 1. The Dialogues	1
Dialogue 1	1
Dialogue 2	11
Dialogue 3	18
Dialogue 4	27
Dialogue 5	36
Dialogue 6	44
Dialogue 7	51
Dialogue 8	59
Dialogue 9	67
Dialogue 10	78
Chapter 2. Structure of Elementary Particle Theory	84
§1. Principles Underlying the Exposition	84
§2. Elementary Particles and Interactions: Classifications	86
§2.1. The Classification and the Tables	86
§2.2. Particles	97
§2.3. Interactions	103
§3. Quantum Mechanics	108
§3.1. The Kinematics	108
§3.2. The Superposition Principle	110
§3.3. Symmetries and Observables	119
§3.4. Quantization and Second Quantization	129
§4. The Lagrangian	136
§4.1. Action	136
§4.2. Gauge Fields and Gauge Invariance	139
§4.3. The Structure of the Lagrangian	142
§4.4. From the Lagrangian to Reality	146

Chapter 3. Comments on the Dialogues	149
Comments on Dialogue 1	149
Comments on Dialogue 2	154
Comments on Dialogue 3	157
Comments on Dialogue 4	165
Comments on Dialogue 5	171
Comments on Dialogue 6	174
Comments on Dialogue 7	175
Comments on Dialogue 8	177
Comments on Dialogue 9	178
Comments on Dialogue 10	183
Comments on Chapter 2	187
Appendix. Strings	190
Index of Names	207
Subject Index	209