

Contents

The Green Lion's Preface	xi
Acknowledgments	xiii
Note to Readers	xv

MAXWELL'S TREATISE ON ELECTRICITY AND MAGNETISM

Maxwell's Preface to the First Edition	1
Preliminary, Arts. 1–23	
Editor's Introduction	9
Arts. 1–23	11
Preliminary, Art. 24	
Editor's Introduction	37
Art. 24	41
Preliminary, Arts. 25–26	
Editor's Introduction	49
Arts. 25–26	53

PART I. ELECTROSTATICS

Chapter I.	
Editor's Introduction	61
Description of Phenomena	63
Chapter II.	
Elementary Mathematical Theory of Statical Electricity	117
Chapter III.	
Electrical Work and Energy in a System of Conductors	141
Chapter V.	
Editor's Introduction	147
Mechanical Action Between Two Electrical Systems	153
Chapter VII.	
Forms of Equipotential Surfaces and Lines of Induction	173

PART II. ELECTROKINEMATICS

Chapter I.	
The Electric Current	189
Chapter II.	
Conduction and Resistance	197

PART III. MAGNETISM

Chapter I.	
Editor's Introduction	203
Elementary Theory of Magnetism	207
Chapter II.	
Editor's Introduction	223
Magnetic Force and Magnetic Induction	225

CONTENTS

Chapter III.	
Magnetic Solenoids and Shells	245
Chapter IV.	
Induced Magnetization	255
PART IV. ELECTROMAGNETISM	
Chapter I.	
Editor's Introduction	261
Electromagnetic Force	267
Chapter III.	
Editor's Introduction	297
On the Induction of Electric Currents	299
Chapter IV.	
On the Induction of a Current on Itself	319
Chapter V.	
Editor's Introduction	327
On the Equations of Motion of a Connected System	333
Chapter VI.	
Editor's Introduction	349
Dynamical Theory of Electromagnetism	353
Chapter VII.	
Editor's Introduction	371
Theory of Electric Circuits	375
Chapter VIII.	
Editor's Introduction	385
Exploration of the Field by Means of the Secondary Circuit	389
Chapter IX.	
Editor's Introduction	409
General Equations of the Electromagnetic Field	413
Chapter X.	
Editor's Introduction	429
Dimensions of Electric Units	435
Chapter XI.	
On Energy and Stress in the Electromagnetic Field	443
Chapter XIX.	
Editor's Introduction	453
Comparison of the Electrostatic with the Electromagnetic Units	459
Chapter XX.	
Editor's Introduction	469
Electromagnetic Theory of Light	473
Chapter XXIII (fragment).	
Theories of Action at a Distance	491

CONTENTS

Bibliography	493
Index	495
About James Clerk Maxwell	505
About the Editor	507