CONTENTS

Preface

TMEDODUGETON	
INTRODUCTION	
Part I, Generalities	
 The non-mathematical framework 	1
2. The trained observer	2
3. The embellishment of truth	4
4. The intrusion of personal feelings	6
5. Some rules of critical analysis	3
Part II, Early History	
6. The historical significance of mathematics	13
 The meaning of mathematics 	16
8. The distant past9. The Greek school of mathematics	19
9. The Greek school of mathematics	22
10. The destructive bends	32 37
11. The miraculous preservation	3 /
Part III, The Slow Renaissance	
12. Dismal prospects in Western Europe	39
13. The pioneers who came too soon	41
14. The leadership that could not last	49
Part IV, The New Beginning	
15. The beginnings of analysis	56
16. Newton	72
17. Preparing for bankruptcy18. Euler19. The rise of mathematics in Paris	89
18. Euler	103
19. The rise of mathematics in Paris	114
CHAPTER I, The Romantic Period	
20. The flouting of arithmetic	124
21. The founding of the Ecole Polytechnique	130
22. Gauss	142
23. The first romantics	152 187
23. The first romantics24. Riemann and Weierstrass25. Between two worlds	204
25. Between two worlds	204

x Contents

CHAPTER II, The Dream of a Conceptual Age, and	
the Hard Reality of Struggle for Existence	
26. The unprized heritage	216
27. The significance of Plato for mathematics	222
28. Cantor and Sets	226
29. Goettingen	233
CHAPTER III, The Age of Contradictions and	
of the Great Question Marks	
30. The art of the possible	249
31. The expansion of mathematics	255
32. Cambridge	266
33. The Hardy-Littlewood era	275
34. The battleground of ideas	295
35. The uncertain further blooming	313
36. The other side of catastrophe	322
INDEX	339