

Contents

Translator's note	VII
Foreword.....	IX
Introduction	XIII
Notes.....	XIX
1 <i>Graßmann's life</i>.....	1
1.1 The historical context	1
1.2 The family: traditions and relatives	9
1.3 Graßmann's youth and university years	15
1.4 The path to independent mathematical achievements (1830 – 1840)	26
1.5 Mathematical productivity and the struggle for recognition (1840 – 1848).....	33
1.6 The Revolution comes to Germany (1848)	45
1.7 Renewed struggles for recognition as a mathematician	58
1.8 Farewell to mathematics, success as a philologist and late acclaim in mathematics	77
Notes.....	89
2 <i>Graßmann's sources of inspiration</i>	101
2.1 Justus Graßmann: Father and precursor of his son's mathematical and philosophical views	101
2.2 Robert Graßmann (1815 – 1901): Brother and collaborator	117
2.3 Friedrich Schleiermacher's impact on Graßmann and fundamental thoughts from his lectures on dialectics	130

Notes.....	155
3 Hermann Günther Graßmann's contributions to the development of mathematics and their place in the history of mathematics.....	165
3.1 Some basic aspects concerning the development of geometry from the 17 th to the 19 th century.....	166
3.2 Graßmann's examination thesis on the theory of tides.....	171
3.3 The 1844 <i>Extension Theory</i> and Graßmann's theory of algebraic curves.....	175
3.4 The prize-winning treatise on geometric analysis (1847)	193
3.5 The <i>Extension Theory</i> of 1862.....	196
3.6 Work on the foundations of arithmetic (1861)	198
3.7 The impact of Graßmann's ideas on the development of mathematics.....	205
Notes.....	212
4 The genesis and essence of Hermann Günther Graßmann's philosophical views in the <i>Extension Theory</i> of 1844.....	221
4.1 The genesis of <i>Extension Theory</i> 's basic principles.....	222
4.2 Hermann Graßmann's basic philosophical principles concerning his determination of the essence of mathematics.....	227
4.3 Hermann Graßmann's views on restructuring mathematics and on locating <i>Extension Theory</i>	235
4.4 Hermann Graßmann's views on the essence of the mathematical method and its relation to the method of philosophy	241
4.5 Graßmann's <i>Extension Theory</i> and Schleiermacher's <i>Dialectic</i>	244
Closing remarks.....	248
Notes.....	249
Chronology of Graßmann's life.....	257
Abbreviations.....	263
Bibliography	265
List of illustrations.....	293
List of persons mentioned	295