

Contents

Photograph Credits	ix
Preface to the Swedish edition	xi
Preface to the American edition	xiii
Chapter 1 The eighteenth century	1
Klingenstierna 1, Bring 5, Bibliography 7.	
Chapter 2 The time 1800 - 1850	9
Hill 10, The Uppsala school 12, Svanberg 13, E.G. Björling 14, Malmsten 18, Hj. Holmgren 26, Appendix: Solvable equations 27, Bibliography 30.	
Chapter 3 A new time in Uppsala and Lund 1860 - 1890	33
Tidskrift för matematik och fysik 33, The 1871-73 contest for a professorship in Lund 35, Björling as a mathematician and teacher 37, Bibliography 39.	
Chapter 4 Algebraic geometry in Lund before 1900	41
Projective and algebraic geometry in the nineteenth century 41, Algebraic curves 42, Algebraic surfaces 44, Algebraic geometry in Lund 1870-1900 44, Bäcklund 44, Björling 45, Björling's textbooks 46, Ruled surfaces. Bergstedt and Wiman 47, Bibliography 49.	
Chapter 5 Bäcklund	51
Differential equations at the end of the nineteenth century 51, Bäcklund on partial differential equations 54, Bäcklund transformations 55, Bäcklund transformations after Bäcklund 60, Oseen's obituary of Bäcklund 61, Bibliography 62.	
Chapter 6 Uppsala 1860 - 1900	65
Daug 65, Dillner 66, Falk 67, Berger 68, The 1889 contest for a professorship in Uppsala 70, Bibliography 71.	
Chapter 7 Gösta Mittag-Leffler – a biography	73
Family and growing up 73, Studies in Uppsala, Paris, Berlin 74, The time in Helsinki 76, The eventful decade 1880-1890 77, <i>Acta Mathematica</i> 77, Sonya Kovalevski 79, The royal prize 81, The time after the age of fifty 82, The will and the Gösta and Signe Mittag-Leffler foundation 83, Mittag-Leffler's students 84, Bibliography 84.	
Chapter 8 Mittag-Leffler's and Sonya Kovalevski's mathematical papers	85
Gösta Mittag-Leffler 85, Mittag-Leffler's theorem about meromorphic functions 86, Mittag-Leffler's star 87, Summation of series 88, Borel summation of power series 88, Mittag-Leffler's notes 89, Sonya Kovalevski 93, Bibliography 95.	

Chapter 9 Astronomy and optics	97
Celestial mechanics 97, Newton 97, Lagrange and Hamilton 98, Generating function 100, Astronomy in the nineteenth century, Poincaré 101, Poincaré and the three body problem 102, Lindstedt, Bohlin, Gyldén 102, Gullstrand 106, Appendix 107, Bibliography 108.	
Chapter 10 Stockholm University 1880-1920 I	109
Bendixson 109, Phragmén 112, von Koch 115, Infinite determinants 115, Differential equations at singularities 116, von Koch's papers 117, Fredholm 119, Fredholm's construction of fundamental solutions 120, Integral equations 121, After Fredholm 124, Fredholm's obituary 126, Appendix: Fundamental solutions by distribution theory 126, Homogeneous equations, the Gelfand-Shilov formula 128, Variants and reductions 129, Hyperbolic operators 129, Bibliography 130.	
Chapter 11 Stockholm University 1880 - 1920 II	133
Analysis 133, Cobb 133, Cassel 134, Petrini 134, Grönwall 135, Malmquist 136, Hille 138, Analytic number theory 138, Stridsberg 140, Wigert 140, Cramér 141, Fourier analysis 142, Riesz 142, Zeilon 146, Zeilon on fundamental solutions 147, Light in doubly refracting crystals, Lamé, Kovalevski 148, Zeilon's solution 150, Appendix: On Huygens's principle and lacunas 151, Bibliography 151.	
Chapter 12 Uppsala 1900 - 1930	155
Wiman 156, Group theory 156, Wiman on solvable equations 158, Entire functions 158, Differential equations 162, Algebraic geometry 162, Obituary 163, Wiman's students 163, Holmgren 164, Holmgren's uniqueness theorem 165, Other papers 166, Obituary 168, Holmgren's students 168, Bibliography 168.	
Chapter 13 Lund 1900 - 1925	171
Brodén 171, Differential equations of Fuchsian type and Riemann's problem 172, Discrete subgroups of the Möbius group 173, Nörlund 174, Difference equations and interpolation 175, Block 177, Theses 178, Bibliography 181.	
Chapter 14 Stockholm 1925 - 1950	185
Carleman 185, Integral equations 185, Carleman kernels 186, Carleman and the abstract theory 189, Generalized kernels 189, Applications 190, Carleman's other papers on integral equations 191, Jensen's formula in a half-plane 191, The Jensen-Carleman formula 192, Approximation by powers z^λ 193, Quasianalytic classes 193, Criteria for quasianalyticity 194, Carleman's short papers 196, Harmonic majorants and harmonic measure 196, Asymptotic paths 197, Approximation by entire functions, Lindelöf's function 200, Uniqueness 200, Mathematical physics 201, Ergodic theorem 201, The Schrödinger operator 202, Asymptotics of eigenvalues 202, The kinetic theory of gases 204, Late papers 205, Summary 206, Carleman's students 206, Pleijel 207, Carlson 208, The thesis 208, Theorems on power series 208, Theorems on Dirichlet series 211, Geometry 212, Summary 212, Appendix: The spectral theorem for self-adjoint operators 213, Hilbert 213, von Neumann 214, A proof of the Denjoy-Carleman theorem 215, Bibliography 216.	
Chapter 15 Lund 1925 - 1950	219
Riesz 219, Interpolation between inequalities, the Riesz-Thorin theorem 219, Applications 221, Conjugate functions 222, Short papers, Medd. Lunds Univ. Mat. Sem. 223, Fractional potentials 224, The wave operator 226, Spinors 229, Obituary 229, Zeilon 230, Oseen's wake theory 230, Zeilon's papers 232, Mathematicians, theses, and papers 234, Hössjer 234, V. Bergström 235, Frostman 236, Berg, Gårding, Fremberg, Malmheden, Lannér 242, Bibliography 243.	

Chapter 16 Uppsala 1930 - 1950	247
Nagell 247, Generalities about rational solutions 247, Algebraic number theory 249, Nagell's work 249, Summary 250, Beurling 250, Beurling's thesis 251, Extremal distance and extremal length 251, Beurling's lemma 252, Milloux's problem 254, Complex analysis 254, Exceptional sets, outer capacity 254, Outer and inner functions 255, Beurling's primes 257, Spectral analysis 258, Spectral synthesis 263, Later papers and summary 264, Beurling's students 264, Esseen 264, Borg 266, Broman, Kjellberg 267, Nyman, Hall, Carleson 267, Appendix 268, Bibliography 268.	
Mathematicians in Sweden 1700–1950	271
Postscript	283
Index	285