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Nota di contenuto	Cover; Copyright; Contents; Abbreviations; About the authors; Preface; Chapter 1: Ardern and Lockett remembrance; 1.1 Introduction; 1.2 Invention of AS; 1.2.1 The context; 1.2.2 The discovery; 1.3 Aftermath of the Invention; 1.3.1 Accelerated implementation; 1.3.2 The patent; 1.4 Subsequent Developments; 1.5 Future Prospects; 1.6 Acknowledgements; 1.7 References; Chapter 2: Wastewater treatment requirements through the years (exemplified by the development in Germany); 2.1 Introduction - The Emergence of Systematic Wastewater Treatment (In Germany) 2.2 Developing Wastewater Treatment Characteristics - From Quasi-Aesthetic Considerations to Chemical, Biological and Health Considerations 2.3 From Consideration of One Specific Point of Discharge to Integral Analysis of an Entire Water Basin; 2.4 From Corrections of Today's Water Pollution Problems to Achieving Wholesomeness of Water for Future Generations; 2.5 How To Guarantee That Standards Are Met (Operative and Administrative Instruments); 2.6 Concluding Remarks - Issues Not Considered; 2.7 References; Chapter 3: Activated sludge process development; 3.1 Introduction 3.2 The Beginning - 1882-1914 3.3 Rapid Acceptance of AS - 1914-1930; 3.4 The Beginning of AS Patents; 3.5 Further Process Understanding and Innovation - 1930-1970; 3.6 The Age of the Selector and BNR - 1970-1990; 3.7 Smaller Footprint, Higher Effluent Quality - 1990-The Present; 3.8 The Future of AS; 3.9 References;

Chapter 4: Microbiology and microbial ecology of the activated sludge process; 4.1 Introduction; 4.2 Which Bacteria are Present? - Culturing and Light Microscopy; 4.3 Identity and Function Revealed by the Molecular Tools - From the Early 1990's
4.4 The Modern Tools - The NGS Era - Since Early 2000 4.5 Comprehensive Ecosystem Model - Where Are We Today?; 4.6 The Future; 4.7 References; Chapter 5: Nitrogen; 5.1 Introduction; 5.1.1 N in domestic wastewater; 5.2 The N Cycle; 5.3 Historical Aspects of Biological N Removal; 5.4 Conventional N Removal; 5.5 Innovative N Removal Approaches; 5.5.1 Simultaneous nitrification and denitrification; 5.5.2 Shortcut N removal; 5.5.3 Deammonification; 5.5.4 Nitrate-dependent anaerobic methane oxidation (N-DAMO); 5.6 Emerging Topics in Biological N Removal
5.6.1 Nitrogen oxide production and emission during nitrification and denitrification 5.6.2 Structure and function of chemoorganoheterotrophic denitrification; 5.6.3 Refractory dissolved organic N; 5.7 N Removal in the Future; 5.8 References; Chapter 6: Phosphorus removal in activated sludge; 6.1 Introduction; 6.2 Early History; 6.3 Development of Biological Nutrient Removal (BNR); 6.4 Process Configurations for BNR; 6.5 Acid Fermentation for Production of VFAs; 6.5.1 Fermentation of primary sludge; 6.5.2 Fermentation of MLSS or RAS; 6.6 Secondary Release of
6.7 Historical and Scientific Perspective
