

# Contents

## Acknowledgments — XI

## Introduction — 1

### Chapter 1: What is Plague? — 9

- The Discovery of *Yersinia pestis* — 9
- Classification of *Yersinia pestis* — 10
- Geographical Distribution of Plague — 12
- Morphology of *Yersinia pestis* — 13
- Growth Conditions, Survival and Resistance — 14
- Infectious Agents of *Yersinia pestis* — 16
- Epidemiological Cycle of *Yersinia pestis* — 17
- Differential Diagnosis, Clinical Picture and Therapy — 20
- Dying from *Yersinia pestis* — 23

### Chapter 2: Inside the Molecular World of *Yersinia pestis* — 25

- Principles of Molecular Biology — 25
- Genetic Variation and Mutations — 27
- From “Innocent Pathogen” to “Natural-Born Killer”: Evolution of *Yersinia pestis* — 31
- The Use of Polymerase Chain Reaction (PCR) in Molecular Studies — 38

### Chapter 3: Aggravating Factors of Plague — 41

- Epidemiological Aspects of Plague — 41
- The Byzantines as Hosts: Geography and Demography — 44
- The Byzantine City as a Risk Factor — 47
- Immunological Aspects of Plague — 53
- Climate as a Trigger Factor — 63

### Chapter 4: Plague-resembling Epidemics from Antiquity to Byzantium — 71

- The *Plague of the Achaeans* (12 c. B.C.) — 72
- The *Plague of the Philistines* (11 c. B.C.) — 72
- The *Plague of Athens* (430 B.C.) — 73
- The *Antonine Plague* (165/166 – 180 A.D. and 189 A.D.) — 76
- The *Plague of Cyprian* (250 – 266 A.D.) — 79
- Epidemics on the Borderline of the Ancient and Medieval Worlds — 80

### Chapter 5: First Plague Pandemic — 85

- Chronicle of the *Plague of Justinian* — 85

Bubonic Plague in the Old Territories of the Byzantine Empire — **94**  
The *Plague of Justinian* in the Kingdoms of Western Europe — **99**

**Chapter 6: The Second Plague Pandemic — 105**

Europe Taken by Surprise — **105**  
The Byzantine Empire in the Midst of the Two Pandemics — **108**  
The *Black Death* in the Byzantine Empire (1347–1400) — **112**  
The *Black Death* in the Byzantine World of the 15 Century — **116**

**Chapter 7: Analysis of the First Pandemic — 123**

Aggregations of Epidemics during the *First Pandemic* in Byzantium — **123**  
The Port of Clysma as a Possible Gateway of the Disease — **141**  
The Molecular View of the First Pandemic — **148**

**Chapter 8: Analysis of the *Second Pandemic* — 153**

Kaffa-Trebizond-Constantinople: Re-Evaluation of de' Mussi's  
Narrative — **153**  
*Pax Tatarica* and the Origins of the *Black Death* — **158**  
The Nature of the *Second Pandemic*: Bubonic or Pneumonic  
Plague? — **165**  
Aggregations of Epidemics during the *Black Death* in the Byzantine  
Space — **168**  
The Molecular View of the *Second Pandemic* — **181**

**Chapter 9: Theories on the Disappearance of Plague (751–1346) — 185**

**Epilogue — 191**

**Lists of Tables, Figures and Maps — 201**

Tables — **201**  
Figures — **201**  
Maps — **201**

**Bibliography — 203**

Sources — **203**  
Secondary literature — **207**

**Glossary — 235**

**Index of Names and Places — 239**

**Subject Index — 246**