

Preface

The primary aim for writing this book was simple: to provide an edition and English translation of Jost Bürgi's *Aritmetische vnd Geometrische Progreß Tabulen/sambt gründlichem unterricht/wie solche nützlich in allerley Rechnungen zu gebrauchen/vnd verstanden werden sol*¹ (1620). To clarify, when I refer to the *Aritmetische und Geometrische Progreß Tabulen* (the abbreviated title will be used hereafter), I mean the manuscript that contains both Bürgi's tables, which were printed with title page, and 23 pages of handwritten text (a 2-page foreword and 21 pages of "instruction" for how to use the tables). There are precious few copies of the *Aritmetische und Geometrische Progreß Tabulen* (and even fewer that contain the handwritten foreword and "instruction"), and the copy that was used to write this book is held in the Department of Special Collections of the Library of the Karl-Franzens-University Graz, in Graz, Austria.

This book is organized into the following chapters. Chapter 1 contains biographical and contextual content to familiarize readers for whom Bürgi is relatively unknown. Several biographies of Bürgi exist, which range from quite brief (e.g., the entry by Nový that appears in the *Dictionary of Scientific Biography*) to book length (e.g., Staudacher's recent book (in its second edition, with a third edition planned), in German and published in 2014). In Chapter 1, I provide enough detail about Bürgi's life and mathematical contributions in order to introduce the reader to a broader story than is typically provided in survey of history of mathematics textbooks. Thus, a secondary aim of this book is to offer readers the opportunity to examine Bürgi's role in the development of what John Wallis identified as one of "two developments that had greatly eased the labour of calculation" (Wallis 1685, pp. 22–23)² and to highlight an accurate telling of Bürgi's mathematical prowess that has not previously appeared in English.

¹ *Arithmetic and Geometric Progression Tables/together with detailed instruction/how to use these in all sorts of useful calculations/and how they should be understood.*

² Wallis identified the two developments as the introduction of decimal fractions by Simon Stevin in 1585 and the invention of logarithms by John Napier in 1614 (Stedall 2008, p. 34).

By way of “full disclosure”—and with his permission—I have heavily drawn upon Fritz Staudacher’s lovely book, *Jost Bürgi, Kepler und der Kaiser* (2014), for the purpose of providing a fluid timeline of Bürgi’s life. Also, I chose to rely more on Staudacher’s text than that of Ludwig Oechslin (*Jost Bürgi*, 2001; also only in German), since Oechslin concentrated more on Bürgi’s mechanics, astronomy, and horology.

Chapter 2 provides brief descriptions for the known copies of the *Aritmetische und Geometrische Progreß Tabulen*, e.g., those that are printed (tables only) and those that include the “Kurzer Bericht” (printed tables and handwritten instructions), as well as a detailed description of the copy that is the focus of this book and which is located in the Department of Special Collections of the Library of the Karl-Franzens-University Graz, in Graz, Austria.

Chapter 3 begins with an orientation to the chapter and a few comments for reading the transcription and translation. Then, the complete facsimile of Bürgi’s *Aritmetische und Geometrische Progreß Tabulen* (i.e., its title page and the text of the foreword and instruction for use of the tables) is given.³ This facsimile is also available for download from www.springer.com/us/book/9781493931606. Next, I provide a corresponding transcription, as it was written, in order to preserve the original text (including errors and idiosyncrasies), as well as Bürgi’s tone and style. Alongside this transcription, I also include a transcription of the Gdańsk (Poland)⁴ manuscript, which is the copy used by Hermann Gieswald in his 1856 edition, so that readers may conveniently and closely examine the subtle and not-so-subtle differences between the two manuscripts. Finally, the translation and commentary is divided into seven subsections, according to the purpose of the text and the type of examples discussed. Heinz Theo Lutstorf published a similar work in 2005 (in German, with no accompanying English translation), in which he analyzed the copy of Bürgi’s *Aritmetische und Geometrische Progreß Tabulen* that is held in Gdańsk, Poland. When appropriate, I have included references to Lutstorf’s commentary to emphasize important points.

Chapter 4 summarizes my perspective on two questions that have been asked numerous times: Who is the copyist of the Graz manuscript of the *Aritmetische und Geometrische Progreß Tabulen*? And, what is the relationship between the Graz and Gdańsk manuscripts?

Although I have received much assistance from very competent writers, mathematics historians, and scholars while working on this project, I am not a traditionally trained historian. Consequently, if you have found your way to this book, I ask that you read it with the two stated aims in mind, as opposed to imposing a critical edition structure on what follows. Finally, I hope that this book provides an important addition to the known scholarship on Jost Bürgi.

Tallahassee, FL

Kathleen Clark

³ However, the facsimile of the 58 pages of tables is given in Appendix C and can be downloaded from www.springer.com/us/book/9781493931606.

⁴ Formerly Danzig, Prussia/Germany.

Jost Bürgi's Aritmetische und Geometrische Progreß
Tabulen (1620)

Edition and Commentary

Clark, K.M.

2015, XIII, 258 p. 97 illus., 93 illus. in color., Hardcover

ISBN: 978-1-4939-3160-6

A product of Birkhäuser Basel