Foreword

Even though 2020 marks the silver anniversary of my entrance into the profession of the history of mathematics, I am nearly certain that I have never met Frank Swetz in person. However, we have worked together since 2014, when I joined the editorial board of *Convergence*, the Mathematical Association of America's online journal for the history of mathematics and its use in teaching that was founded in 2004 by Frank and Victor Katz. Using email to discuss the process, I have posted dozens of the several hundred “Mathematical Treasures” Frank has collected, which consist of images and explanatory text for landmarks and other works in the history of mathematics that are useful in teaching mathematics. Additionally, I have edited and posted submissions from other individuals and institutions, and I have even written a number of my own entries for the collection, spotlighting mathematical objects held by the Smithsonian Institution's National Museum of American History.

This book discusses several more of our shared interests, including the history of women and mathematics; the history of print culture, which involves interactions between authors, publishers, and readers; the history of formal and informal mathematics education; and modern British history. As Frank notes in his preface, *The Ladies' Diary* has long fascinated historians of mathematics; indeed, the sources he lists are all on my own bookshelves. One of the strengths of his addition to this literature, from my point of view, is that he has made the periodical accessible to a non-academic audience. If you have been gifted this book or picked it up wondering what a “diary” for women has to do with mathematics, you will find a fascinating cast of colorful characters in the journal’s editors. You will get a sense of how rapid social and economic changes in England helped facilitate the success of *The Ladies' Diary*, and you will learn about the structure of the publishing industry in the eighteenth century. You will be introduced to several other contemporaneous and interlinked developments, such as increased literacy rates, ever-louder questions about what and how women and non-elite classes should learn, the relationship between problem-solving and a widespread audience of capable amateur mathematicians, and concerns raised by British mathematicians about what a professional discipline of mathematics [99]}
should look like. The story of The Ladies’ Diary also intersects with stories on the European and North American continents. Overall, Frank has provided a lively biography of this periodical.

The Ladies’ Diary has been popular with historians of mathematics because it is wonderful to uncover a community of female readers who energetically engaged in doing and communicating about mathematics, perhaps particularly during a period in which most of the other women who are remembered for their mathematics were exceptional in their achievements and in their social and intellectual access to notable male mathematicians who could encourage and publicize their work. (If you are not familiar with names such as Maria Agnesi, Emilie du Châtelet, Mary Somerville, and Ada Lovelace, do go look them up after finishing this book.) At the same time, though, The Ladies’ Diary poses a puzzle to historians who study women because it was under the editorial control of men throughout its history, and most of its contributing authors were men. Furthermore, during the latter two-thirds of the journal’s history, male readers displaced its initial female audience. Frank points out some reasons for this, such as the appeal of introducing content oriented toward male university students into an already established publication. As someone who has repeatedly taught Joan Scott’s groundbreaking article on gender and history to undergraduate history majors, I also think one of the histories of The Ladies’ Diary that is yet to be written needs to consider both its men and its women through the lens of gender. How did expectations for how men ought to behave in eighteenth- and nineteenth-century British culture influence their actions with respect to The Ladies’ Diary? How might The Ladies’ Diary provide a case study for power relationships among men, among women, and among men and women?

In his epilogue, Frank suggests additional directions for research by future scholars. His bibliography can serve double duty as a list of recommended sources for those readers who want to learn more about any of the many topics addressed in the story he tells. Although it has been conducted electronically, my relationship with Frank is one of my personal “mathematical treasures.” I hope you enjoy his book.

–Amy Ackerberg-Hastings
–Co-Editor, MAA Convergence
Preface

Over the years, during my investigations into societal effects on mathematics teaching and learning, distractive topics and subjects have appeared. They were distractive in the sense that they were not directly pertinent to the immediate inquiry; nevertheless, they were often very interesting and I made note of some of them for later inquiry. So it was with *The Ladies’ Diary: or The Woman’s Almanack*. In the 1970s, questions regarding female performance in mathematics were in the forefront of educational research, particularly the issue of female participation in mathematics: “Why are so few women attracted to the study of mathematics? What factors in the female make-up repel them from mathematics?” Elizabeth Fennema at the University of Wisconsin led the efforts to find answers to such questions. But in this process of understanding the effects of gender on mathematics teaching and learning, many researchers often came up with exotic causes: left-brain versus right-brain dominance; lack of testosterone, as mathematics is an aggressive subject; and so on. Based on my research and observations, particularly in non-Western societies, I had put the issue to rest in my mind, concluding that historical social and cultural conditioning in Euro-centric societies established intellectual limits for women, excluding them from mathematical pursuits. Furthermore, I felt this aura of discrimination was deservedly lessening and would soon be extinct.

It was in this period of concern and inquiry in 1977 that I first came across mention of *The Ladies’ Diary: or The Woman’s Almanack*, a British eighteenth- and nineteenth-century journal that encouraged and promoted mathematics for women. This periodical was the subject of an article by Teri Perl in the *Mathematics Teacher*, a journal dedicated to mathematics teaching, published by the National Council of Teachers of Mathematics. The concept of proper English ladies, in the mold of Jane Austen’s or the Brontë sisters’ heroines, doing mathematics and revealing it for the public review in this period of history was fascinating. I knew that British society of the eighteenth and nineteenth centuries had strict codes of conduct and expectations for their young ladies that distinctively did not include involvement in mathematics and science. Intellectual pursuits
for women in general were discouraged. It was thought such strenuous cerebral activity would cause a “fever of the brain.” English women of the period were not even afforded an academic education. But here was an apparent contradiction, an aberration, “How and why did it happen?” I had to find out more. In 1979, Perl published a more extensive article on the subject, “The Ladies’ Diary: or The Woman’s Almanack, 1704-1841.” Eventually, I came across the work of Shelly Costa, whose Cornell dissertation of 2000 followed up by her Osiris article: “The “Ladies’ Diary”: Gender, Mathematics, and Civil Society in Early-Eighteenth-Century England”, 2002, revealed the existence and significance of The Ladies’ Diary to a broader audience. Costa’s scholarly study traced the evolution of the Diary to the middle of the eighteenth century, 1754, and noted the feminist mathematical statement it made and its place in the English “dualist civil society”. In 2008, Joe Albree and Scott Brown published “‘A valuable monument of mathematical genius’: The Ladies’ Diary (1704-1840)” in the journal Historia Mathematica in which they examined the Diary’s mathematical content in relationship to the mathematical climate of the period. Their article strengthened my opinion even more of the intellectual and societal significance of this eighteenth-century ladies’ periodical.

The deciding impetus for a further investigation on my part was supplied by John Heilbron’s splendid book, Geometry Civilized: History, Culture, and Technique (2000 edition). Throughout the text, his discussion on geometry is supplemented by illustrative problems. Many of these problems and their solutions were taken from The Ladies’ Diary. The problems’ compositions demonstrated imagination and ingenuity as well as a broad knowledge of fundamental mathematics. Simply, they were good problems! At this time, I edited a problem section for the Mathematical Association of America’s e-journal Convergence, “Problems from Another Time”, and I began to include some of Diary’s problems in my selections. They were well received by the viewing audience and frequently made their way into classroom teaching. When, in 2012, I published a book on problem solving: Mathematical Expeditions: Exploring Word Problems Across the Ages, I included a chapter of problems selected from The Ladies’ Diary. I had read and used the Diary as a problem resource, but then I wished to know more about it. “What is the detailed story, or stories, within this ladies’ journal awaiting to be told?” “Why did the journal come into being?” “How was it received?” “What was its impact, both contemporary and prolonged?” Thus, it is with this background and questions that I begin my exploration to obtain a better understanding of The Ladies’ Diary. Come with me!

The first chapter provides a general introduction, a feel, a foreshadowing as to where the investigation will take us. Each succeeding chapter then focuses on
and explores a specific issue concerning the development of *The Ladies' Diary* or its impact. Directly under the titles of these probing chapters, a question is posed for the reader, an overriding query intended to be resolved within the immediate reading. An extensive bibliography is offered both to document the validity of the information presented and to assist future scholars who might wish to continue this research into *The Ladies' Diary*. Three appendices provide the more adventurous readers with further problem-solving challenges. I am particularly indebted to several people who assisted me in the initiation and processing of this manuscript. First, Teri Perl who, through her publications (1977, 1979), introduced me to *The Ladies' Diary*. Next, a cadre of people that assisted in preparing the manuscript for publication: Jennifer Jillson, who read the completed manuscript and made several important suggestions that enhance the final version; Dorothy Weir, a neighbor and friend, for her artistic renderings; Amy Ackerberg-Hastings, a colleague–historian who contributed the Foreword; and finally, Carmela Ortiz Menendez, for her coding of the manuscript into the required LaTeX format. Lastly, I wish to thank my grandson Braden Howe for his encouragement. Of course, the presentation of facts and the subsequent conclusions stated rest with me, the author.

This journey of understanding we will undertake spans more than the approximately century and a half of the *Diary*’s existence, 141 issues, and, to an extent, it must probe the psychological, social, and intellectual precedents of this periodical’s appearance. There is much to examine and learn. Not every issue of the journal can be read in detail, but its basic objectives and messages can be understood. This is what I will try to discern and relate. When possible, I will use the *Diary*’s actual words and illustrations to convey meaning as it was intended. In doing so, I will expose the reader to some of the customs and foibles of pre-Victorian British society: word usage, spellings, and punctuation. When possible, I will quote witnesses’ testimony of the time: correspondents, editors, and critics. This practice is intentional, as I believe the best way to understand an historical situation is to culturally participate in it as fully as possible: attempt to recognize the wit, the verbal ostentation and posturing, the format, punctuation and emphasis of written statements, and the intellectual motivation. Feel the stirrings of social change that are beginning to surface and project them into the formation of the British society you know today. Let us start the journey.

–Frank Swetz