

Preface

This book is about Marjory Stephenson, almost forgotten but very significant British biochemist, exceptional woman and scientist, who in the 1930s opened new research fields—chemical and general microbiology—and stood at the cradle of the Society of General Microbiology. Books often have their own histories. The story of this one started in 1958 in the old building of the Faculty of Science in Prague, in the lecture theatre of the chemistry department. I was then a fourth year biochemistry student listening to the lecture of *dozent* Arnošt Kleinzeller, external member of the staff, whom we had not met before. Until this day, biochemistry consisted for us of its “static” and “dynamic” parts: we had learned about composition of living bodies, cellular enzymes and metabolic pathways, but this strangely looking man unlocked for us a new world of science. He spoke about Watson, Crick, Jacob and Monod, regulation processes going on in the cell we had never heard about and we hardly understood. The lecture had a flavour of a forbidden fruit since everything smacking of genetics used to be taboo in Communist Czechoslovakia of the 1950s. However, at that time barriers were slowly lifting and we were eagerly taking notes as no modern textbooks were available except rather outdated manuals. It was Dr. Kleinzeller’s course where I heard first time in my life also about Marjory Stephenson whose *Bacterial Metabolism* Dr. Kleinzeller recommended us as one of the best contemporary books on biochemistry. I borrowed from the University Library the 1949 edition, which to my surprise was available, but admittedly I did not find it interesting at all, and so Stephenson’s name was shelved for many years into the background of my mind. Only many years later I got to understand the high esteem Dr. Kleinzeller had for Stephenson. He succeeded to flee to England in 1939 from the Nazi occupied Czechoslovakia; Hans Krebs, Frederick Hopkins and Marjory Stephenson provided him refuge in their laboratories and introduced him to biochemical work with microbial model systems¹ which he brilliantly applied in his research after returning to his homeland [1].

¹For details see Chap. 5.

All this, however, I only found out many years later. In 1963, I defended my Ph.D. thesis on lactose permease in *Escherichia coli* at the Prague Institute of Microbiology of the Czechoslovak Academy of Sciences and my research then concerned regulation of enzyme synthesis in some microorganisms. In 1964–65 thanks to the political thaw, I was allowed to accept the invitation of Luigi Gorini, Italian born microbiologist, to work as postdoc at the Department of Bacteriology and Immunology of the Harvard Medical School. Luigi had made some fundamental discoveries on regulation of bacterial enzyme synthesis and had a profound impact on thinking about regulation of gene expression [2, 3]. Three years later, in September 1968, I left under dramatic circumstances Prague occupied by the Warsaw Pact armies, to work for three months at Sussex University with the visionary biologist Brian C. Goodwin [4]. My stays in Luigi's and Brian's labs represented a fundamental change and inspiration for the rest of my life, but in the dark times of political "normalization" in Czechoslovakia I had to forget about all my aspiring plans.

After series of coincidences and fortuities I was converted in 1976 from biochemist to historian of science and, obviously, history of biochemistry became my main topic. Due to my previous research interests I wished especially for exploring history of research cellular regulation processes, however such ambitious project was unfeasible in Communist Czechoslovakia where travelling and research in the West almost equalled a dream. In 1992, after the "velvet revolution" a grant from the Wellcome Trust enabled me to work in the British archives for six weeks. The documents I found highlighted the ground-breaking role of Marjory Stephenson not only in the history of biochemical adaptation, but in the history of the 20th century biochemistry in general, and so she finally became my principal hero for the next twenty years. The more I have read about her, the more she has captivated me not only as a creative independent researcher who paved the way to molecular biology, but also as a personality who got such recognition as only very few women scientists of her time. Reading the documents was like peeling of onion.² Gradually I have got new insight into Stephenson's scientific achievements, leadership qualities and links to various people and institutions. Especially her correspondence containing a mix of matter-of-fact operational notes along with private passages offered some clue to the question which personal features and circumstances of her life had made her so exceptional.

My research on Stephenson, her collaborators and institutional background, has been progressing in the course of about twenty years when I have published several articles not only on Stephenson but also on other related matters linked to history of biochemistry, molecular biology and women in science. She has been "rediscovered" since the 1990s also by several other historians of science whose works, all quoted in this book, provided invaluable additional data. Two of them I owe special appreciation. Harmke Kamminga whom I met first in Cambridge in 1992, introduced me to the environment of the Hopkins laboratory and was the

²The expression was coined by the German novelist Günter Grass in the title of his autobiography *Peeling the Onion* (2006).

first who suggested me to write Stephenson's biography. She died untimely in 2013 and I lost in her a friend and also a brilliant colleague historian whose advice and criticism would have helped me a lot in preparing this book. Another treasured friend and expert on Stephenson and Cambridge women was Joan Mason, a distinguished British chemist, who founded after her retirement in 1994 the Association for Women in Science and Engineering (AWiSE) and devoted much of her time also to history of women in science and gender studies. We were in touch for many years, and when she attended the 21st International Congress of History of Science in 2001 in Mexico City in a wonderful shape and full of energy neither of us suspected that this was our last encounter. At that time she asked me to organize the symposium of the Women in Science Commission in Prague in 2003 and we also agreed to write jointly Stephenson's biography. Unfortunately, shortly before travelling to Prague Joan had an accident which did not allow her to participate in the meeting. She did not recover anymore and died in 2004 [5]. Joan remains irreplaceable and I am sure that the book would have been incomparably better with her collaboration

It took me a long time to write Stephenson's biography not only because I had to work on other projects, but also because "peeling the onion" has become a painstaking business of putting many bits and pieces together. Eventually, the narrative turned out to be not strictly chronological, although it preserves to a certain extent also the timeline. In the individual chapters I attempted to show various facets of Stephenson's life and work, both personal and professional, along with the historical background in which her story was unfolding. Some of the chapters, especially those describing Stephenson's experimental work might be too detailed to the lay reader; nevertheless certain particulars might be interesting to biochemists or microbiologists. I tried to understand in this book how does it happen that a woman scientist becomes an exceptional leader in an environment which tolerates women in science but does not expect them to play a role strictly reserved for men. Although in Stephenson's biography apparent dramatic events are missing, I became ever more fascinated by the intrinsic drama of her life and hope I was able to pass this captivation also on the reader.

Prague
December 2015

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Holding Hands with Bacteria

The Life and Work of Marjory Stephenson

Štrbáňová, S.

2016, XX, 145 p. 36 illus., 22 illus. in color., Softcover

ISBN: 978-3-662-49734-0