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# The Role of Women in the History of Geology

EDITED BY

C. V. BUREK

University of Chester, UK

and

B. HIGGS

University College Cork, Ireland

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## Preface

The seeds of this book lie back in 1998, during discussions which took place in the middle of the Atlantic Ocean at the Fundación Canaria Orotava de Historia de La Ciencia in La Orotava, Tenerife. At this time a European project, Penelope, under the Comenius initiative, was taking place (led by Agustín Isidro, coordinator of the project in Tenerife), to include the history of science within the secondary school European National Curricula (Cartwright & Burek 2000). Three countries – Spain, the United Kingdom and France (specifically Tenerife, Chester and Rennes, respectively) – had come together to develop an educational course to emphasise the importance of the history of a science subject as a context for that subject and as a possible recruitment agent. This resulted in a conference at Fundación Canaria Orotava de Historia de La Ciencia, La Orotava, España, on 22–28 July 2001, entitled ‘The Role of the History of Sciences in Secondary Education’ (González 2002).

It was hoped that this exposure might encourage students to study science by introducing it through a historical context. Serendipity played a part here as each country had one female scientist attached to it.

During these discussions it became apparent that, although mathematics, biology, geology, physics and the history and philosophy of science were to be represented, the role that women played did not feature. After discussion, it was decided to run a workshop supported by two short lectures on the work of famous female mathematicians and geologists. Anne Boyé of the University of Nantes would illustrate the former and Cynthia Burek the latter. Anne’s job was made easier as a booklet aimed at high-school teachers on famous female mathematicians, such as Sophie Germaine, Maria Agnesi and Emmy Noether, had just been produced in France (Boyé 2002).

However, female geologists were another matter. Few scientific papers had been published and what Burek thought was to be a simple task turned out to be 4 years of hard research. Several researchers, such as Hugh Torrens (1995), Martina Kölbl-Ebert (1997) and Mary and Tom Creese (1994), with some others represented here, had touched on the subject and produced individual papers on Mary Anning, Mary Buckland and Etheldred Benett in the United Kingdom, Alice White in Canada (Sarjeant 1984) and Florence Bascom in the United States (Arnold 1977). However, other more general material, such as that produced in *The Scientific Lady – A Social History of Woman’s Scientific Interests Between 1520–1918*

by Phillips (1990) and, more recently, *Women and Science* (Le May 2005) barely mentioned female geologists. Indeed *Hypatia’s Heritage* by Alic (1986), subtitled *A History of Women in Science from Antiquity to the Late Nineteenth Century*, has less than two pages out of 190 on female geologists. *Women of Science: Righting the Record*, edited by Kass-Simon & Farnes (1990), did contain a small chapter on ‘Women in geology’ by Aldrich, but it concentrated mainly on women in the United States. She did, however, cover some of the roles they adopted as illustrators and workers in the State surveys and in the early petroleum industry. One paragraph is devoted to British women collectors and authors in the 19th century. Work undertaken by Paula Gould (1998) at Cambridge University mentioned some female geologists, but only in passing.

During the next 6 years, some relevant papers were published and history of science books grasped the public’s imagination such as *The Map that Changed the World* by Simon Winchester (2001), *The Dating Game* by Cherry Lewis (2000) and *The Dinosaur Hunters* by Dorothy Cadbury (2000). The role women played sometimes surfaced but it was clear that there was room for more research and certainly more exposure. Thus the conference entitled ‘The role of women in the history of geology’ was born in November 2005.

The context of this conference was to raise not only the work of female geologists but also the role that women played in the development of the science of geology. Individual papers on female geologists had been accepted for the conference but early on it was decided that, if this was the case, we would concentrate on those no longer able to tell their own story. The publishing house of the Geological Society of London then offered to publish a book based on the proceedings of the conference with other contributions not presented at the time. They recognized this as the first of its kind and we have to thank Angharad Hills and the reviewers of the original proposal for their foresight in this.

I must thank both my fellow convenors of the conference, Professor John Mather of the University of London and Dr Bettie Higgs of University College Cork, for their willingness to discuss, organize and take forward this vision, born like a volcano erupting out of the middle of the ocean from its hidden depths, to be seen by all.

I would also like to publicly acknowledge the History of Geology Group (HOGG), the Geological

Society of London, and the UK Resource Centre for Women in Science, Engineering and Technology (WiSET) for their active support and financial contributions, and those men and women back in Tenerife (especially Agustín Isidro), who did not laugh but actively supported the idea of women as role models in science.

We hope that this book will result in raising the profile of women geologists and the fundamental role they have played in the history of the science. This should then encourage other women to take up the baton rather than the hammer in today's world and advance geological knowledge. We would like to take as a conceptual analogy the subtitle of Kölbl-Ebert's paper in *Earth Science History* (2002): 'A conglomerate with a female matrix'. This is the way forward.

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*Professor Cynthia Veronica Burek  
and  
Dr Bettie Higgs*