

# New Book, *Bloody Brilliant*, Highlights the History of Blood Groups and Blood Groupers

By Jay Lewis  
MANAGING EDITOR

In a laboratory in Vienna in 1900, Karl Landsteiner discovered that different properties were sometimes observed in blood from different individuals. In contrast to the current thinking of the time, Landsteiner realized these differences were unrelated to the health of the individual. Through further analysis, he discovered that there were indeed several distinct types of blood—or blood groups. Landsteiner and others continued to expand on this research, paving the way for many important aspects of modern medicine, particularly blood transfusions.

The century of research and scientific advancement that followed Landsteiner's discoveries is chronicled in *Bloody Brilliant: A History of Blood Groups and Blood Groupers*, a new book by Steven R. Pierce, SBB(ASCP) and Marion E. Reid, PhD, published by AABB Press.

The book offers a sweeping chronology of the history of blood groups and the leaders in the field—the blood groupers whose work and discoveries had a profound influence. The book highlights many significant discoveries and advancements that

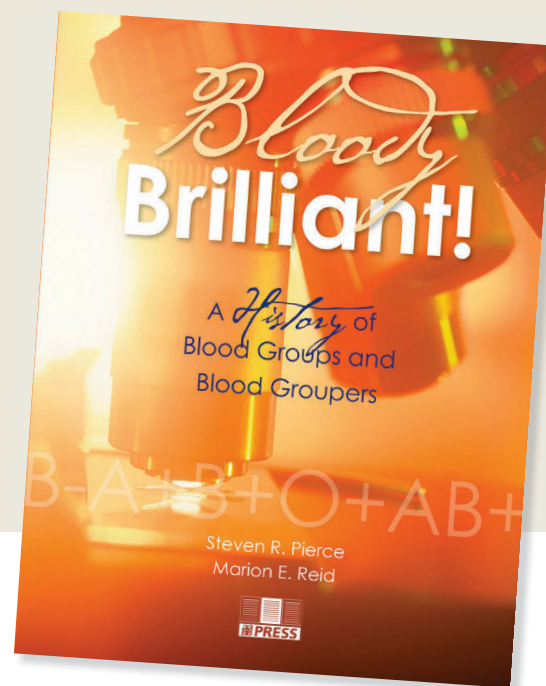
shaped the field of blood banking and includes interviews with, and anecdotes about, the field's leading figures.

## Inspiration

Pierce and Reid said they were first inspired to write the book in 2003 during a conversation about the changes in the field of blood banking. The two realized that many of the most influential figures were no longer working in the field; they also wanted to compile stories about how the field had evolved—and the men and women who shaped this evolution—for the next generation.

"The era of blood group serology was waning and the many blood groupers who had been active during the last half of the twentieth century—most of whom we knew personally—were retiring or dying," Pierce told AABB News. "We hoped to capture their stories while they were still available and to document their accomplishments."

What followed was more than a decade of interviewing men and women who had worked in the field of blood banking and compiling their



stories. Pierce and Reid joked that in many cases, the so-called interviews consisted of swapping stories with people they had known for many years. But they soon realized there was a trove of information that should be included in the book—so much so that compiling and writing the stories took longer than originally planned.

## Learning history

Although Pierce and Reid had many years of experience in the field, they said they learned a lot while working on the book. "We were surprised at how much of our history we did *not* know and how much we had *not* been exposed to, even though we had worked in the field for decades and felt we had a good appreciation of its history," Reid said.

Pierce and Reid said that in many cases, interviews led to more information than they expected, as conversations revealed new insights and interesting recollections. "Each

interview, each investigation led down myriad paths and it was often hard to know which to follow and which to let go," Reid said. "It was quite easy to get off onto areas that were fascinating but which drew us too far afield from the topics on which we wanted to concentrate."

The two agreed that one of their favorite aspects of the book is how they were able to tell stories that revealed the personalities behind some of the leading figures in the field. "Some of our favorites stories are those in which blood groupers interact with patients and donors: Polly Crawford going to family reunions to collect specimens and taking ice cream to cajole children and reluctant family members; Kay Beattie arranging to get a fellow out of prison so he could be tested; Marion Lewis and Bruce Chown travelling the icy Canadian roads to get samples from women delivering babies with hemolytic disease; Malcolm Beck turned away by a woman who resented his British accent," Pierce said. "We like these kinds of stories because they show how dedicated these folks were in tracking down special blood group problems, even when it meant getting out of the lab, usually on their own time, and going the extra degree."

Pierce and Reid said that tracing the history of blood groups and blood groupers became somewhat challenging when covering certain time periods. At some points during particularly prolific periods of advancements, there were so many developments at once, it

became burdensome to stick to the chronological structure of the narrative. "Especially in the later decades of blood group serology, so much was happening simultaneously, it was difficult to organize the many threads into a comprehensible story," Pierce said. "Often it seemed we could not bring in one topic without

the field, no matter their age. Younger professionals may learn stories about their predecessors and the history of blood banking; more experienced professionals will enjoy reading about people they know and the leading figures who had an enormous influence on the field. "We hope readers will appreciate that there



**Steven R. Pierce, SBB(ASCP) and Marion E. Reid, PhD, the authors of *Bloody Brilliant*.**

first explaining another, which in turn required bringing in something else."

To deal with this, the authors decided to abandon the chronological order for certain sections of the book. "The latter parts of the book are much less chronological than the first," Reid said. "We'd have to follow one thread, then go back and pick up another. "

### **Readers' response**

Pierce and Reid said they hope the book will be appreciated by those in

were real people behind discoveries, behind tests and procedures they take for granted every day," Pierce said. "Everything we do, know, or think we know, about blood groups has come from observations made by dedicated serologists—people who saw things and didn't just let them go, but who were determined to work things out and to share that information with others."


The two authors also said they hope the book draws attention to the many people who made enormous



Pierce and Reid signing books during the 2016 AABB Annual Meeting.

contributions to the field and whose work had a major influence over many aspects of modern medicine. “To most of the world, blood groupers—from the hospital tech to the reference lab worker to the research scientist—are invisible,” Reid said. “But we hope the book helps to show their dedication and helps explain how, mainly by shaking test tubes every day, they play such an important role in transfusion medicine and beyond—to fields like genetics, forensics, biochemistry and the era of molecular biology we are now in.”

*Bloody Brilliant* is available now and has been selling well. Pierce and Reid attended the 2016 AABB Annual Meeting, held in October in Orlando, where they sat for a book signing. The available books sold out at the AABB Bookstore and so many attendees were waiting in line to get their books signed, a time extension for the book signing was necessary.

More information on *Bloody Brilliant* is available on line at [www.aabb.org/bloodybrilliant](http://www.aabb.org/bloodybrilliant). 

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## BOOK REVIEW

### **Bloody Brilliant! A History of Blood Groups and Blood Groupers** *by Steven R Pierce and Marion E Reid*

Hardback, 633 pages  
AABB Press  
October 2016

This engaging book records how the blood groups were discovered and shows how these findings underpinned the ability to perform blood transfusion safely and to set up effective blood banks. The authors are both well known and respected in this field.

The history is told in five sections. The first lays out the discovery of antigens and antibodies in blood, the definition of the ABO groups, and the initial working out of their chemical structures. Section two focuses on Rhesus factor and haemolytic disease of the newborn. This is the most exhilarating part of the book as the text reads almost like a detective story. Section three describes how blood groupers set up blood banking organisations, especially in the US, and highlights the importance of medical technologists and scientific programmes. Section four discusses technical aspects of blood grouping. The final section delves into the structures and significance of the many antigens found on the red blood cell surface.

Towards the very end of the book the authors "*remind the gentle reader that this book is a history and not a comprehensive scientific treatise on blood groups*". That said, they do provide thorough reference lists for each section. The joy of the book, however, is the way in which it is structured. Footnotes on virtually every page succeed in creating an informal feel; never intrusive and often very amusing, they bring interest to even the most worthy topics.

It was always the authors' intention to bring their subject to life. By concentrating on the people involved, they have done this supremely well. There are photographs on most pages, in which the individuals are nearly always smiling, and biographies in boxes that in no way disrupt the main text. In addition, diagrams explaining key aspects of technology and historical product advertisements nestle alongside the text to add further exuberance.

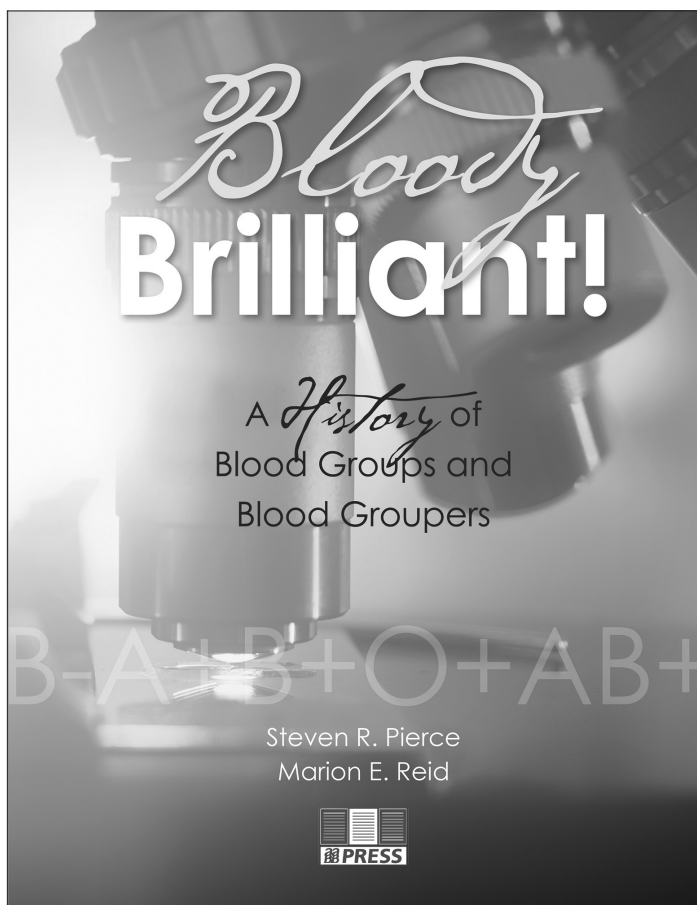
*Bloody Brilliant!* took ten years to write. The authors have succeeded magnificently in clarifying often elusive and contradictory areas of scientific and medical advancement: from Landsteiner's original thoughts and experiments, through the recognition and characterisation of multiple blood group systems, to today's safe transfusion systems. It will undoubtedly be the reference book of choice for many years to come and – most importantly of all – it is a great read.

**Derwent Swaine**  
**February 2017**

Published online at [www.bshhm.org.uk](http://www.bshhm.org.uk).

# ***Bloody Brilliant: A History of Blood Groups and Blood Groupers***

S. Gerald Sandler



What a joy and privilege to read and reread this unique and extraordinarily informative history for this review! Pierce and Reid have authored a 633-page, 28-chapter tome, containing 796 illustrations, including photographs of individual contributors to the field of blood group serology, as well as group photographs of landmark meetings and conferences held during the past 100 years. The Index lists the names of 1046 individuals who are acknowledged as contributors to the history of blood group serology, many of whom are the subject of cameo biographies.

First and foremost, *Bloody Brilliant* is a meticulously documented history of the discovery and early characterization of blood groups, beginning with Karl Landsteiner and the ABO blood group system at the beginning of the 20th century. Each

chapter concludes with an extensive list of references. There are a total of 5014 journal articles and other citations, making this volume a must go-to resource for any future blood group system review that intends to be comprehensive and include the early discoveries and studies. *Bloody Brilliant* is accompanied by formal portraits of individual contributors, including a studio-quality full-page portrait of Karl Landsteiner and another of Philip Levine with Alexander Wiener. For the early history, Pierce and Reid conducted a global search for suitable illustrations and portraits. Each photograph is credited to its source, including the Wellcome Library (London), the University Archives (Heidelberg), the National Portrait Gallery (London), the Archivio Storico dell'Università delgi Studi (Pavia), the University of Debrecen Electronic Archive (Debrecen), the Max Planck Society (Berlin), the State Library of South Australia (Adelaide), and many others. The authors recognize the historic role of organizations such as the AABB, the American Red Cross, and the Invitational Conference of Investigative Immunohematologists (ICII, colloquially known as "Icky"), as well as the support of specific hospitals, blood centers, and reagent manufacturers that maintained reference laboratories and fostered generations of expert reference serologists.

In addition to a formal history of blood group serology, this volume is a scrapbook of snapshots, personal recollections, and intimate profiles of the personalities behind the journal articles and conference presentations. An alternative subtitle for *Bloody Brilliant* might have been "Blood Groupers After Hours." From early years to the present, the discipline of blood group serology has consisted of a relatively small number of serious professionals who shared their scientific work openly and who collaborated at an international level, sharing ideas, blood samples, lecture slides, and bar tabs. *Bloody Brilliant* captures this unique international community with anecdotes and illustrations. There is a nine-page ICII Photo Album with 89 snapshots contributed by Kay Beattie, Don Swanson, Marilyn Moulds, Ellen Case (for John Case), Steve Pierce, and others. The ICII Photo Album captures informal portraits and scenes from four decades of meetings, after-meetings, and the casual side of blood groupers around the globe.



Steven R. Pierce and Marion E. Reid. *Bloody Brilliant: A History of Blood Groups and Blood Groupers*. Bethesda, MD: AABB Press, 2016.

Lastly, this tome requires a production model for the publisher, AABB Press, that is unique among their publications. Typically, AABB Press publications—*Standards*, *Technical Manual*, *Guidelines*, and scientific texts—have a short life, becoming outdated only months to a few years after

printing. *Bloody Brilliant*, like good wine, will only increase in value over time. It will never go out of date. As the authors state in the Preface, “newcomers to our field will not personally know the giants and the many anecdotes and behind-the-scenes stories that we had been raised on [and are] about to be lost.” A few years from now, the next generation of blood groupers—probably molecular scientists—will need to seek out copies of *Bloody Brilliant* to understand the foundation of the discipline. I am hopeful that AABB Press will keep *Bloody Brilliant* available for the long term. When our generation of blood groupers retires, discarding our outdated textbooks and conference proceedings, we’ll keep our copies of *Bloody Brilliant* for our personal libraries. *Bloody Brilliant* captures a uniquely personal, collegial, and productive history. It is a valued resource for our generation and will be for generations to follow.

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### Manuscripts

The editorial staff of *Immunohematology* welcomes manuscripts pertaining to blood group serology and molecular genetics for consideration for publication. We are especially interested in review articles, case reports, papers on platelet and white cell serology, scientific articles covering original investigations or new blood group alleles, papers on molecular testing, and papers on new methods for use in the blood bank. To obtain instructions for

submitting scientific articles, case reports, and review articles, see Instructions for Authors in every issue of *Immunohematology* or e-mail a request to [immuno@redcross.org](mailto:immuno@redcross.org). **Include fax and phone numbers and e-mail address with all manuscripts and correspondence.** E-mail all manuscripts to [immuno@redcross.org](mailto:immuno@redcross.org).

**Steven R. Pierce and Marion E. Reid, *Bloody Brilliant: A History of Blood Groups and Blood Groupers* (Bethesda, MD: AABB Press, 2016). ISBN: 978-1-56395-910-3 (HB). Colour illustrations. 633pp.**

In the United States, blood transfusion services have, since 1947, been operated by a mix of Red Cross and independent blood banks, which together make up the American Association of Blood Banks. Their primary functions in the postwar years were to collect blood from blood donors; perform blood grouping and screening, and basic separation into blood components; to test blood for infectious disease; to store it appropriately; and then to get it to hospitals where it was cross matched for individual patients. In Australia and New Zealand, too, a network of laboratories developed that could not just test the blood for the basic blood groups, but also provided reference services to assist in resolving results that were difficult to interpret.

Although Karl Landsteiner identified the ABO blood groups in 1900, and the Rhesus groups were described in 1939, between about 1947 and 1990, a large club of blood groupers developed on both sides of the Atlantic, with important branches in Europe and the Commonwealth countries. Since then amalgamation of many of the smaller services has resulted in very large organisations that can cope with the evolution of the gift of blood as a donor-centred function and that can now meet the high expectations attached to what might be viewed otherwise as a potentially dangerous medicine.

Steve Pierce and Marion Reid have written *Bloody Brilliant* with considerable assistance from many friends and colleagues. It recalls many dedicated scientists in the blood grouper club, whose biographies offer not just details of scientific achievement but also insights into their personalities, as recalled by their colleagues. I knew some of them, and listened to many or read their journal articles, textbooks, and manuals, so it was a pleasure to renew their acquaintance. The many personal photographs of the actors in this enormous endeavour complement the stories.

Although this book is written primarily from an American perspective, the now-routine developments of lifesaving surgery, various forms of transplantation, and the conquest of haemolytic disease of the newborn (HDN) have been international efforts. And the contribution of Australians and New Zealanders has been partly captured in these pages; many of the names bringing back strong memories of sturdy personalities with a ferocious dedication to their craft.

Australian involvement is documented in several fields, of which the most intriguing, from a modern perspective, is the use of blood

groups in studies of race in the pre–World War II era. John Cleland of the University of Adelaide carried out extensive sampling of Aboriginal communities, building on the work of Arthur Tebbutt and Sarah McConnell of Sydney. They concluded that Aboriginal blood groups were indistinguishable from those of Europeans. The blood group laboratory at CSL (Commonwealth Serum Laboratories in Melbourne) became the leading reference laboratory in the Asia-Pacific region under the leadership of Roy Simmons, John Case, and Derek Ford. The CSL sent out regular test panels of red cells and sera to many transfusion laboratories for testing as a quality control exercise. In addition, Simmons was involved, with Rachel Jakobowicz and Lucy Bryce, at Melbourne's Blood Bank, in the early days of untangling the mysteries of HDN. He then worked with Carleton Gajdusek on kuru samples from Papua New Guinea.

Australia and Australians have a distinguished record in the prevention of HDN, of which only a small part is documented in the book. The pioneering efforts in New York of John Gorman (from Bendigo) are mentioned, as is the earliest use in January 1964 of concentrated RhD Immunoglobulin (Anti-D) to successfully prevent the development of HDN. Although this occurred outside clinical trials that were being undertaken at Liverpool, the news soon hit the press and stimulated an international effort to harvest and prepare Anti-D from immunised volunteer blood donors. While the US and UK stories are well told, an opportunity has been missed to tell of the remarkable efforts of blood groupers Gerard Vos, George Kelsall, Eric Shaw, Robyn Barlow, and Gordon Archer that led the Australian achievement of providing every Rh negative mother with free Anti-D prophylaxis by 1968.

This book is a timely and suitable memorial to all those members of the club of blood-groupers who mixed serum and cells in various ways, tapping small tubes to check that the red cells really were clumped, and recording their findings meticulously. Some were doctors, but most were laboratory scientists; in fact this is a tribute to their individual contributions before most laboratory work became automated. Some readers may consider some of the detail obscure, but those with an interest in blood transfusion will find this a well-written and fascinating account of some of the giants and less well-known scientists who created what is now a very safe blood transfusion system in the US and elsewhere.

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