

Encyclopedia of Pathology  
Series Editor: J.H.J.M. van Krieken

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REFERENCE

Jan G. van den Tweel *Editor*

# Pioneers in Pathology

 Springer

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# Encyclopedia of Pathology

**Series Editor**

J. H. J. M. van Krieken

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Jan G. van den Tweel  
Editor

# Pioneers in Pathology

With 210 Figures and 2 Tables

 Springer

*Editor*

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## Series Preface

When Denis Diderot started the first encyclopedia in the eighteenth century, it was a groundbreaking and timely event. It was the time of the Enlightenment, and knowledge was seen as something which was to be spread to many and to build upon by creating new knowledge. His ambition was to bring all available knowledge together in one series of books so that every person who could read has access to all there is to know. Nowadays, in a time of easily accessible knowledge, the question is whether there is still need of an encyclopedia. It is obvious that the amount of knowledge is such that it is not possible to bring it all together in one encyclopedia. One may argue that the Internet is the encyclopedia of today, but that misses an important point of Diderot, a point that is probably even more valid today. He created a team that valued information and selected what was worth to be presented in the encyclopedia. He recognized that science is not a democratic process where the majority decides what is true and valuable, but rather a growing body of knowledge in which radical ideas from individuals may bring about huge changes, even though most would reject these new ideas in the beginning. Indeed, the Internet lacks such authority and it is not easy to select valuable information from nonsense, especially when one is not an expert in a certain field.

It is therefore that an encyclopedia is only as good as the team that creates it. It goes without saying the team that is responsible for the Encyclopedia of Pathology consists of recognized experts in the field. Pathology is a growing medical discipline in which the amount of information is probably already more than that the whole encyclopedia of Diderot contained. For experts in subspecialties within pathology, it is already almost impossible to keep an overview on new developments and to select relevant from less relevant new information. There are plenty of textbooks for every disease group, and scientific literature is available for most pathologists through PubMed or GoogleScholar. What is lacking is a systematic overview of what we know in an alphabetical order, easily accessible to all. The encyclopedia of pathology fills that gap. It is written by experts with the general pathologist in mind and also specialist from other disciplines. It will consist of a series of volumes on subspecialties, and when it is completed there will be an online version combining these. Yearly updates from the online version are foreseen and readers are welcome to provide suggestions for improvement. These will be judged by the editorial team in order to keep the encyclopedia authoritative yet using the expertise of many.

Finally, it is my hope that the encyclopedia will grow into a reliable body of knowledge in pathology, enabling communication through a common language, and that it will grow and adapt to new developments.

Nijmegen, The Netherlands

J. H. J. M. van Krieken

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## Volume Preface

It is amazing how easy it sometimes is to become regarded as an expert in a certain area of competency. This happened to me a decade ago. As a frequent participant of the USCAP, I always tried to attend the companion meetings of the History of Pathology Society. In 2006 the secretary, the late Allan Tucker, surprised me when I entered the meeting room, by saying that he had forgotten to tell me that I was in that meeting going to be elected as incoming president of the society. My protest against this surprise move was of no avail. “All I had to do was to organize the meeting for 2008,” he said. That meeting about *Famous Europeans who shaped Pathology* attracted an audience exceeding the room capacity and resulted in several requests for extensive summaries of the lectures. As a consequence, I was asked to organize symposia on the History of Pathology at several IAP and ESP congresses.

Around that time, also the idea for an Encyclopedia of Pathology was born and the series editor proposed that historical persons as well as other aspects of pathology should be covered. In 2009, he asked me to edit this part. Suddenly, I found that I was considered to be an expert in the field in which I did not consider myself to be a true expert. Nevertheless, after ample consideration I accepted the invitation. Initially, the idea was to cover approximately 140 entries that were proposed by a large group of interested colleagues who wanted to participate in the project. However, 6 years later only 107 entries had been written and I made the decision to leave it for what it was when the publishing deadline arrived. I felt that a few names more or less in an enormous compendium of 15–20 books would not be a major issue.

The situation changed dramatically when Springer in 2015 decided to start publishing the encyclopedia as different subspecialist volumes. The publication of a volume with the title *Pioneers of Pathology* required an almost complete coverage of persons considered for this prestigious title. Early in 2016, I approached the members of the History of Pathology Society and of ESP working group History of Pathology to supply me with additional names. Only deceased persons, or living persons over 80 years of age, could be included. This request resulted in approximately 100 additional names. Nearly, all these suggested names are now covered in this revised volume. This practical development is the reason why some people are covered in this book, while others are not. However, the advantage of this encyclopedia is that the content is not something static but fluid; new names can be added in the course of time.



The completion of this volume was very complicated, but thanks to the efforts of many colleagues, some of them already a pioneer in their field, and the help of dedicated Springer staff, we did the job within a year. I owe all of them a lot.

Retrospectively, after reading through the lives and performances of so many men and women who shaped pathology (and of course medicine), I regretted the fact that I never had a book like this on my shelves earlier in my life. The amazing things these pioneers achieved are very instructive for understanding numerous diseases and made me feel very humble.

July 2017  
Utrecht, The Netherlands

Jan G. van den Tweel

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## Acknowledgment

For my wife Marijke, for her patience, and with apologies that this project drew more heavily on our time than foreseen by me.



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## Editor Biography



**Jan G. van den Tweel** is Emeritus Professor and Chair of Pathology at the University Medical Center in Utrecht, the Netherlands, but at the time of this project still professionally active in the Pathology Department.

He completed his medical training and his simultaneous PhD degree (*The thymus in vitro*) at the Faculty of Medicine at Utrecht University. Subsequently, he was chief of the Cell Culture Section at the Department of Immunohematology and Blood Bank of Leiden University Hospital. Here he was involved in the discovery of the first HLA-DR antigens.

During his subsequent pathology training at the Pathology Department of Leiden University Hospital, he specialized for nearly 2 years in hematopathology at the University of Southern California in Los Angeles, California, with Dr. Robert Lukes. His main interest is bone marrow pathology. He was in 1991 a founder of the European Bone Marrow Working Group (EBMWG), and its first president for 10 years.

Jan van den Tweel held several international positions, including secretary of the Pathology Section of the European Association of Medical Specialists and coordinator of its international examinations. He was president of the British Division of the International Academy of Pathology (IAP), of the US History of Pathology Society, and of the History of Pathology Working Group of the European Society of Pathology (ESP). He was also the president of the 16th ESP congress in Maastricht in 1998, the Netherlands, and of the XXIVth

International Congress of the IAP in Amsterdam in 2002. From 2007 to 2010, he was the director of the EU Erasmus project “European Pathology Assessment and Learning System” (EuroPals).

In addition, he is editorial board member and reviewer of several international pathology journals. In 2016, he coedited his third book: “*From Magic to Molecules: An Illustrated History of Disease*,” containing a comprehensive overview of the history of pathology.

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## Series Editor Biography



**J. H. J. M. van Krieken** is a pathologist with special expertise in the fields of hematopathology and the pathology of the gastrointestinal tract. He was professor for tumor pathology since 1999 and kept from 2005 to 2015 the chair of pathology at the Radboud University Nijmegen Medical Centre in Nijmegen. He furthermore served as chairman of the Board of the Oncology Institute of the Radboud University, Nijmegen from 2008 to 2016. Since 2016, he is the rector magnificus (vice chancellor) of the Radboud University.

He was the treasurer/secretary of the European Association for Hematopathology from 2000 to 2008, from 2003 to 2011 the treasurer, from 2013 to 2015 the president of the European Society for Pathology (ESP), and from 2015 to 2017 the past-president of the ESP. Furthermore, he coordinates the ESP quality assessment program and is the chair of IQN path. He is (co) author of more than 500 papers in peer-reviewed journals (H-index 79), has written chapters in books on pathology and oncology, is editor of a Dutch textbook on oncology, and serves on the editorial board of the *American Journal of Surgical Pathology*, is managing editor of *Virchows Archiv*, and is the chief editor of the *Journal of Hematopathology*. Since 2011, he is member of the German Academy of Sciences Leopoldina, and since 2014 of Academia Europea and Honorary Fellow of the Royal Society of Pathology of Great Britain and Ireland.



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## Abbott, Maud (1869–1940)

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### English Names

Maude Abbott

### Original Names

Maude Elisabeth Seymour Babin

### Other Names

Maude Elisabeth Seymour Abbott

### Date, Country, and City of Birth

March 18, 1869, St. Andrews East (today Saint-  
André-d'Argenteuil), Québec, Canada

### Date, Country, and City of Death

September 2, 1940, Montreal, Canada

## History of Life

Maude Abbott (Fig. 1) was born in St. Andrews East, Québec, Canada. Her mother died of tuberculosis



**Abbott, Maud (1869–1940), Fig. 1** Dr. Maude Abbott (Source: National Library of Medicine (B01504). Copyright statement: The National Library of Medicine believes this item to be in the public domain. <http://ihm.nlm.nih.gov/luna/servlet/view/search?q=B01504>)

a few months later. Maude and her sister Alice were abandoned by their father, adopted, and raised by their grandmother. Maude Abbott was the first woman to obtain a bachelor degree in 1890 from the Arts Faculty at Montreal McGill University. This was the third class to accept women at McGill. After graduating in Arts, Maude Abbott tried to be admitted to McGill's Medical Faculty. At that time, McGill did not accept women in the medical course and refused Abbott's application. An energetic woman, Abbott struggled to be admitted and organized a public petition to allow women to study medicine at McGill at their own expenses. Her struggle enlisted friends, newspapers, and stirred public opinion in her favor. Excited discussions and debates followed between Montreal's physicians and the University, but her petition was dismissed with a statement that McGill could not undertake the medical education of women.

The medical school of the University of Bishop's Medical College, Bishop's University, was located at downtown Montreal. Although Bishop's Medical College did not have McGill reputation, that farsighted institution decided to accept women. Octavia Grace Ritchie (1868–1948), the first physician of province of Quebec, graduated from Bishop's in 1891. The Medical College invited Maude Abbott to join the medical school in 1890. Abbott immediately accepted the offer and graduated with the Senior Anatomy Prize and the Chancellor's Prize for her academic achievements in 1894. Abbott was to petition McGill's Medical School several times during her period at Bishop's always with negative results. After graduating, Abbott traveled to Zurich and matriculated at the medical school in the winter term of 1894. She studied for the next 2 years at the University of Vienna. This period in Europe was of utmost importance in her formation and decision to study pathology. As Abbot wrote later in her autobiographical notes, published by H.E. MacDermot in "Maude Abbott, A Memoir" (MacDermot 1941):

In the consensus of opinion then (and I believe still) the greatest things to be had there [Vienna], by far, were the pathology with Kolisko and Albrecht and the Internal Medicine courses with Ortner in Neusser's clinic... it was the grounding in Internal Medicine and pathology... that determined my bent and made possible my later work at McGill

In 1897, Abbott returned to Montreal and opened a general practice that was neglected over several years. Since her return, Abbott's primary goal was to obtain a position at McGill. As her objective was becoming closer, private practice drew less attention from her. Immediately after Abbott returned to Montreal, she was invited by Dr. Charles Martin to practice medicine at the Victoria Hospital, where she worked with Dr. John Adami on a case of pigmentation cirrhosis of the liver. The resulting article, entitled Pigmentation cirrhosis of the liver in a case of hemochromatosis, was presented to the Montreal Medico-Chirurgical Society, leading to a unanimous resolution to include women in its future membership. This article was also presented to the Pathological Society of London in 1900, being the first ever by a woman and subsequently published in its journal. Dr. Martin also commissioned Abbott to write on functional heart murmurs. The Montreal Medical Journal published "On So-called Functional Heart Murmurs" (Abbott 1899). These articles are fine examples of the beginnings of the career of a remarkable pathologist.

Abbott met William Osler (1849–1919) in 1898 in Baltimore. The famous physician, who served as the first pathologist at Montreal General Hospital, pointed out to her that the McGill museum contained several specimens that would be extremely valuable in the classification of disease and to the development of new and accurate methods of diagnosis. Abbott returned to Montreal with renewed energies.

The creation of an official Chair of Pathology in 1898 carried with it the responsibility for the Museum of Medicine at McGill. Its first occupant, George Adami, appointed Maude Abbott Assistant Curator in 1898, an unpaid post. Abbott was finally admitted to McGill. She quickly became the heart and soul of the Museum, reviewing and cataloging its specimens and promoting it to the Faculty. Her effort resulted in increased prestige for the museum, and its specimens began to be used for medical student teaching (Smith 1984). Full curatorship was assigned a few months later. The main task was to organize and catalog a massive collection of specimens practically forgotten since the beginning of the century. There

were few models of medical museums at the time, so Abbott visited several museums in the USA. The way Abbott organized McGill Medical Museum helped to unveil the immense teaching potential of these collections. The impact of her work changed the perception of these collections at McGill and worldwide. During the first years of the twentieth century, Abbott classified, counted, identified, and described hundreds of specimens of the museum, some dating back to the advent of the medical school in 1823. Abbott originated a system of museum teaching in which the newly organized McGill's collection proved an invaluable tool to medical students. Abbott wrote:

In 1902 and 1903 they gave me a purse in acknowledgement of the volunteer nature of these demonstrations. . . the Faculty. . . placed the museum demonstrations on the curriculum as a compulsory part of the course. . . . (Smith 1984)

When William Osler visited the Museum at McGill in 1904, he was so impressed with Abbott's contributions that he wrote to the Dean of the Medicine that her work "was the best that McGill had done to date, (that) she had a genius to organizing (McGill Medical Museum) and there was no collection in North America or Britain that came close to it."

Abbott helped to organize the International Association of Medical Museums (IAAM), a standard-setting society of museum curators known today as the International Academy of Pathology (IAP). IAAM first documented meeting occurred on May 6, 1907, in the Army Medical Museum in Washington, D.C., presided by Dr. W.G. MacCallum (1874–1944) in the presence of William Osler and Maude Abbott among other distinguished physicians. As international secretary, a post she held from 1907 to 1938, the indomitable Maude Abbott became the moving force of IAMM. She also served as editor of the *Journal of the International Association of the Medical Museums*. The letterhead of the International Academy of Pathology contains the phrase "Founded by Maude Abbott in 1906" (Cooke 2006). The IAP established the Maude Abbott Lecture in 1958. Closing of the first meeting in Washington, Dr. MacCallum urged all members to help repair the damage provoked by a fire which destroyed the medical building at McGill

University and extensively damaged the museum collection in April, 1907. Salvaging and replacement started immediately, and Maude accepted donations from medical departments from all over the world. McGill awarded Abbott an honorary medical degree in 1910 and appointed her as Lecturer in Pathology for the medical staff, 8 years before McGill finally admitted female medical students. Maude Abbott was appointed Chief of Pathology at the Women's Medical College of Pennsylvania in 1923. Abbott was finally appointed Assistant Professor at McGill in 1925 and returned to McGill in 1926, where she resumed her work on congenital heart disease. By 1915, the massive descriptive catalog of McGill Museum started to be published. The preface of part 4 of the catalog Abbott made a tribute to a man who recognized her talent and supported her work:

The initiative taken by Sir William Osler in this matter (funds raised for the catalogue), and the generosity of the spirit in which it was met, form an inspiration and supply a stimulus that will, we hope, continue to be reflected in later volumes, until the extensive task of cataloguing the Museum is complete. (Smith 1984)

Such tribute reflects the decisive effect of Osler on Abbott's career. In 1899, Abbott consulted Osler about a specimen of *cor trinoculare*, a three-chambered heart. Osler encouraged her to pursue the study of congenital cardiac defects (Nuland 1988). Maude Abbott's research achieved its most relevant point in 1936, with the publication of the *Atlas of Congenital Cardiac Disease* (Abbott 1936). It was a compendium of about a thousand cases Abbott's dissected and described personally. It became the most important reference work on the pathologic anatomy and pathophysiology of inborn defects of the heart. In her lifetime, Abbott became the world's most recognized expert on the anatomical cardiac defects and their physiopathology of her time. Her work helped to pave the way for the successful treatment of tetralogy of Fallot, commonly known as the blue baby syndrome. Helen Taussig (1898–1986) consulted Abbott in Montreal in 1938, a pivotal moment in the advancement of the knowledge and future treatment of this cardiac anomaly, one of the most common congenital



cardiac defects. An untreated child rarely survives for more than 5 years. Helen Taussig advanced the method of diagnosis of this disease and later collaborated with Alfred Blalock (1899–1964) and Vivien Thomas (1910–1985) to develop the first successful treatment of this disease and to inaugurate the modern era of cardiac surgery.

Maude Abbott retired in 1936 and was awarded an Honorary Doctorate by McGill. She died of a stroke in Montreal on September 2, 1940.

Maude Abbott is remembered today not only as a pioneer woman doctor but also as a leader in pathology and cardiology. The National Historic Sites and Monuments Board of Canada designated her as a Person of National Historic Significance in 1993. Abbott was inducted into the Canadian Medical Hall of Fame in 1994. Canada Post celebrated Maude Abbott, the cardiac pioneer, in the year 2000 with her portrait on a postage stamp, named “The Heart of The Matter.” Mexican muralist Diego Rivera also immortalized Abbott in his grand fresco commemorating history’s 50 greatest heart specialists on the walls of the National Institute of Cardiology in Mexico City. Abbott was the only woman and also the only Canadian included. Considering her affection for McGill, Abbott’s best posthumous honor may lie in the name of the McGill Adult Unit for Congenital Heart Disease Excellence, known as M.A.U.D.E.

## Main Achievements in Medicine/ Pathology

The Atlas on Congenital Heart Diseases (Abbott 1936), originally published in New York by the American Heart Association, is her main achievement in the history of medicine, pathology, and cardiology. Paul Dudley White (1886–1973), whose textbook, *Heart Disease* (White 1931) featured Abbott’s work, stated in the foreword to the Atlas of Congenital Disease that: “Senac, Peacock, Rokitansky and Keith... richly advanced our knowledge of congenital heart disease but it was left to Maude Abbott, fired by a spark from Osler, to make the subject one of such general and widespread interest... she has been the most important of the pioneers in establishing

Congenital Heart Disease as a living part of clinical medicine.” Maude Abbott’s research moved forward the treatment of CHD by some 20 years at least.

## Books and Publications

Maude Abbott wrote over 140 articles and books. Some of the more interesting are:

Abbott, M. (1936). *The Atlas of congenital cardiac disease* (Originally published in New York by the American Heart Association in 1936).

Abbott, M. (1911). Pigmentation-cirrhosis in a case of haemochromatosis. Reprinted from *The Journal of Pathology and Bacteriology*. Edinburgh and London, J. Pentland, December 1900 in book form.

Abbott, M. (1902). *An historical sketch of the Medical Faculty of McGill University*.

Abbott, M. (1908). Chapter IX: Congenital cardiac disease. In W. Osler (Ed.), *Modern medicine: Its theory and practice, IV: Diseases of the circulatory system; diseases of the blood; diseases of the spleen, thymus, and lymph-glands*. Philadelphia/New York: Lea & Febiger.

Abbott, M. (1916). *Florence Nightingale as seen in her portraits*.

Abbott, M. (1921). *McGill’s heroic past, 1821–1921: An historic outline of the University from its origin to the present time*.

Abbott, M., & Meakins, J. (1915). *On the differentiation of two forms of congenital dextrocardia*.

## Cross-References

► [Osler, William \(1849–1919\)](#)

## References and Further Reading

- Cooke, R. A. (2006). *Scientific medicine in the twentieth century: A commemoration of 100 years of the IAMM and the IAP*. Surry Hills: Australasian Division of IAP.
- Nuland, S. (1988). *Doctors: the biography of medicine* (1st ed.). New York: Knopf.
- Smith, K. (1984). Maude Abbott: Pathologist and historian. *Canadian Medical Association Journal*, 127(8), 774–776.