

Review of Ioan James, Remarkable mathematicians:

From Euler to von Neumann, Cambridge University Press, Mathematical Association of America, 2002, 433 pp + xiv.

by
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This book is published in the expository and popular Spectrum Series of the Mathematical Association of America and is essentially a collection of short profiles of the principal mathematicians who lived in the 18th, 19th and the a large part of the 20th century. The author, an emeritus professor of Oxford University, is an eminent topologist and this book is his first attempt at presenting the development of modern mathematics as reflected in the biographies of sixty of the greatest practitioners of the field. The profiles are presented in chronological order of the year of birth. The first is Leonhard Euler (1707 - 1783) and the last is John von Neumann (1903 - 1957), hence the subtitle of the book.

It is not an easy task to outline the development of two centuries of modern mathematics through the lives of only 60 principal players. As we know, most of the significant advances in modern mathematics was made in the 19th and, even more so, in the 20th century. Of the 60 profiled, only two of them (Euler and d'Alembert) lived wholly in the 18th century while 10 of them straddled two halves of the 18th and 19th century. The most distinguished example from the latter group is the German mathematician Carl Friedrich Gauss (1777 - 1855). The greater majority (four-fifths) lived wholly in the 19th century. Conspicuously missing from the list is Isaac Newton (1643 - 1727) whose physical existence began when Europe was in the last throes of the medieval ages and whose scientific and mathematical legacy belongs more to the 19th and even the 20th century.

The selection of the greatest pathfinders is undoubtedly unmistakable and unquestionable, but the selection of some of the great ground breakers must be subjective in taste, if not in judgment. Some of the famous names are missing, like Lesbegue, Daniel Bernoulli, Lobachevskii, Bolyai, van der Waerden and others. Many of those featured in the book have been featured in greater detail in E.T. Bell's classic Men of mathematics. But James' book gives us information that is not so easily available to the general public on well-known practitioners like Henry Smith, Mittag-Leffler, Hausdorff, Cartan, Borel, Takagi, Hardy, Veblen, Brouwer, E.H. Moore, R.L. Moore, Lefschetz, Chebyshev, and many others.

One learns about some aspects of mathematicians that have never been thought to be relevant or important until only recently when the development of mathematics began to be affected by funding and competition from other disciplines. For example, Felix Klein is portrayed as one of the first "mathematical CEO". Then we also learn that mathematicians not only scale mathematical heights but are also skilful mountain climbers. For example, the Princeton topologist J.W. Alexander liked to enter his office at the top of the building from the outside by scaling the building. And the story of Hausdorff is revealing and is one of the many tragic and poignant stories brought about by the racial madness of the Nazis. How many people other than professional mathematicians would have heard of Wiener, Aleksandrov, Zariski and Kolmogorov, much less know about their lives and accomplishments? This book gives you some such glimpses.

One peculiarity, which some would consider to be a defect, of mathematical profiles is the mandatory listing of honours and awards, which, to the non-mathematician, would appear to be dry and formal, devoid of the actual content of the achievements. By and large, most mathematicians, except for those caught up in the storms of tumultuous times, lead comparatively uneventful lives if one goes by the available accounts. Perhaps the exciting part of their lives is the excitement and impact generated by their ideas. Unfortunately, the physical limitations of publishing do not allow much space to be devoted to the mathematical details.

The profiles in this book are understandably brief - after all, it is not an encyclopedia of scientific biography, of which there are excellent works. This book is a useful reference on those featured. Any educated person interested in the development of science and mathematics would profit from it by going through it, even if he or she has to skip the personal scholastic details. It puts the human face to the abstract terms which are household terms to a student of mathematics. It shows that mathematics is a human enterprise with its full share of mortal struggle and failings even though mathematicians do not usually reveal their non-mathematical personal side of their lives.

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