Scientia Canadensis

Canadian Journal of the History of Science, Technology and Medicine
Revue canadienne d'histoire des sciences, des techniques et de la médecine

Mathematics and the Historian's Craft: The Kenneth O. May Lectures. Edited by Glen Van Brummelen and Michael Kinyon. (New York: Springer, 2005. 357 p., ill., index. ISMB 0-387-25284-3)

Deborah Kent

Explore this journal

Cite this review

siècle est particulièrement bien exposée et illustrée. Il faut rendre hommage aussi à la qualité de l'édition : le choix des illustrations et leur reproduction servent opportunément la démonstration et ajoutent au plaisir de l'œil.

Quelques coquilles se sont infiltrées dans un texte par ailleurs de très bon niveau. Signalons, page 44, « Parish of Varrene's or St Anne » devient, dans la légende, « Paroisse de Varrene ou de Sainte-Anne » : Varrene perd son « s » et l'ajout du « de » Sainte-Anne en modifie le sens, comme si Sainte-Anne était une autre paroisse, alors que c'est le nom patronal de la paroisse de Varennes. A propos du contenu, l'auteur avait annoncé quatre siècles de cartographie du Canada, de 1550 à 1950. En fait il traite très peu de la période antérieure à 1760. Sur les quelque 200 cartes et illustrations reproduites, une vingtaine seulement évoque le Régime français. Et pourtant, les thèmes de ses chapitres auraient pu – auraient dû – intégrer l'évolution cartographique des deux premiers siècles du Canada. Que ce soit pour la configuration des villes, pour les relevés hydrographiques ou pour tracer des chemins à partir de ceux des autochtones, la collection de Bibliothèque et Archives du Canada comporte de nombreux et importants documents des 16e, 17e et 18e siècles d'une grande signification sur les thèmes traités. La carte de Coronelli de la couverture du livre en est un bel exemple. Une meilleure utilisation de ces documents aurait permis de couvrir adéquatement le sujet et aurait reconnu, à sa juste valeur, l'apport français à la description cartographique de *Terra Nostra.*

Quoi qu'il en soit et malgré ces quelques réserves, cet ouvrage rencontre son objectif en comblant de grandes lacunes dans la connaissance de la cartographie canadienne des 19e et 20e siècles.

RAYMONDE LITALIEN
Conservateur honoraire des Archives du Canada

Mathematics and the Historian's Craft: The Kenneth O. May Lectures. **Edited by Glen Van Brummelen and Michael Kinyon.** (New York: Springer, 2005. 357 p., ill., index. ISMB 0-387-25284-3).

This volume, the twenty-first in the CMS Books in Mathematics series, is a collection of keynote addresses from the annual meetings of the Canadian Society for the Historyand Philosophy of Mathematics (CSHPM) from 1990 through 2003. The CSHPM's annual keynote address is the "Kenneth O.May Lecture," to honor the accomplished mathematician, historian, and educator who served as founding editor of

Historia Mathematica, around which scholarly activity in the history of mathematics has centered over the last 30 years. May, of the Institute for History and Philosophy of Science and Technology at the University of Toronto, viewed work in the history of mathematics as an undertaking that involves both historical sensitivity and good mathematical practice. Thus, the history of mathematics presented in this volume is a fusion of the crafts of the historian and the mathematician. The preface provides a quick overview of the activities and direction of the CSHPM, which is North America's main scholarly society for the history and philosophy of mathematics, since its inception in 1974. It includes the chronology of CSHPM leadership and a list of the annual meeting themes and Kenneth O. May lectures since 1990. What follows these lists is a picture of historians of mathematics at work.

In "Introduction: The Birth and Growth of a Community," CSHPM archivist Amy Shell-Gelasch chronicles May's life and describes his achievements for the history of mathematics and his role as a catalyzer of the discipline. This is followed by Ivor Grattan-Guinness's discussion of "History or Heritage? An Important Distinction in Mathematics and for Mathematics Education." Grattan-Guinness states here some unique qualities of the history of mathematics and offers a contemporary articulation of May's vision for the further development of the discipline. These two opening chapters introduce the discipline, while the subsequent ten are organized roughly chronologically in terms of the mathematics treated. Alexander Jones begins in ancient Greece with "Ptolemy's Mathematical Models and their Meaning." Jones tackles the technicalities of Ptolemy's work and considers, in historical and philosophical context, Ptolemy's understanding of his own models and their relation to nature. Rooted in the distant past, this examination demonstrates that mathematics for Ptolemy is a science that reveals deep truths about the world and our relation to it.

The volume then skips to the eighteenth century for Jim Bennett's discussion of "Mathematics, Instruments and Navigation, 1600-1800." Bennet warns against imposing twentiethcentury conceptions of mathematics on historical practitioners and explains the expansive view of mathematics (prevalent in his time period) that included navigation, astronomy, warfare, architecture, and engineering. He specifically considers the inadequacies of navigational practices and instruments discussed in the textbooks as examples of the complex reality of mathematical practice. Bennet demonstrates that idealistic stories about the past are neither as complex nor as fascinating as clearly-conceived and well-documented historical investigations. The next chapter likewise cautions against seeing a straightforward progression from eighteenth-

century mathematics to the mathematics of today. In "Was Newton's Calculus a Dead End? The Continental Influence of Maclaurin's Treatise of Fluxions," Judith Grabiner argues that this 1742 text has been seriously underrated. Based on rigorous mathematics, social context, and methodological influence, Grabiner concludes that Maclaurin's Treatise was not only motivated by research goals in analysis, but it also links the calculus of Newton to continental analysis.m Another eighteenth-century chapter is "The Mathematics and Science of Leonhard Euler (1707-1783)," by Rüdiger Thiele, who follows Euler from Basel, to Berlin, to St. Petersburg, remarking on his educational and professional development. The well-illustrated paper both documents Euler's pleasant disposition and suggests the magnitude and scope of his mathematical brilliance. It investigates Euler's work in analysis and, especially, his understanding of the concept of a function.

The two middle chapters depict the development and early growth of mathematical research communities in Canada and the United States. Thomas Archibald and Louis Charbonneau present a preliminary survey of "Mathematics in Canada before 1945." They link the development of mathematics in English and French Canada to the evolution of infrastructure in education, government, and publishing through periods of growth and development that parallel Canada's history to 1945. Karen Parshall similarly considers "The Emergence of the American Mathematical Research Community" in the last quarter of the nineteenth century. Her story centers on an analysis of James Joseph Sylvester, Felix Klein, and Eliakim Hastings Moore, at Johns Hopkins University, Göttingen University, and the University of Chicago, respectively, and their influence on the maturation of research mathematics in America. In "19th Century Logic Between Philosophy and Mathematics," Volker Peckhaus examines the relationship between the philosophical and mathematical developments of logic in the nineteenth century. He considers the philosophical and mathematical contexts of nineteenth-century Germany and Great Britain, from both of which "new logic" or "mathematical logic" developed. Peckhaus investigates the disinterest of philosophers in formal logic and explores reasons for mathematicians' interest in this topic at the intersection of philosophy and mathematics. The set theoretic work of Georg Cantor, investigated by Joe Dauben in "The Battle for Cantorian Set Theory," also bridges the disciplines of philosophy and mathematics in the late nineteenth century. The well-illustrated chapter describes Cantor's proof of the nondenumerability of the continuum of real numbers as the beginning of transfinite set theory. While considering Cantor's technical development of transfinite cardinal numbers and his mathematical conflicts, Dauben carefully explores the

delicate connections between Cantor's faith in God, his mental illness, and his mathematical work, which would prove revolutionary in the twentieth century. The famous lecture of David Hilbert at the Paris meeting of the International Congress of Mathematicians (ICM) in 1900 likewise boasts extensive impact. In "Hilbert and his 24 Problems," Rudiger Thiele – twice the May Lecturer – explores Hilbert's mathematical interests and research questions that would drive significant work in twentieth-century mathematics. Thiele presents here the first publication of Hilbert's previously unknown 24th problem about finding a criteria for simplicity of proof. In "Turing and the origins of AI," Stuart Shanker aims to assess the influence of Turing on pursuant work in artificial intelligence. Shanker argues that Turing's work, at the interface of analytic philosophy and psychology, transformed the concept of a machine, created new models of thinking, and provided insightful analysis of cognition.

The final chapter, "Mathematics and Gender: Some Cross-Cultural Observations" from Ann Hibner Koblitz, challenges the perpetuated understanding that few women are, ever have been, or are even capable of being involved in serious mathematical activity. Through cross-cultural investigations, Koblitz illustrates the currently (and historically) complicated and contradictory picture of women in mathematics. With these high-caliber samples of various approaches, like biographical research, textual study, institutional history, technical investigation, sociological inquiry, archival work, to the history of mathematics, Mathematics and the Historian's Craft offers a good introduction to the CSHPM and its activities. This effort to make CSHPM scholarship more accessible to a broader scholarly audience succeeds in providing a good survey of recent projects and questions of interest in the history and philosophy of mathematics.

DEBORAH KENT
Simon Fraser University

Technology / Technologie

Fish versus Power: An Environmental History of the Fraser River. **By Matthew D. Evenden.** (Cambridge: Cambridge University Press, 2004, xvii, 309 pp., diag., ill., tables, maps, bibl. ISBN 0-521-83099-0 £40.00)

Fish Versus Power is a welcome addition to the growing literature on the environmental history of British Columbia. Covering the period from