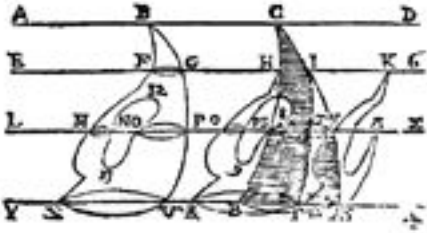


# BULLETIN

## CSHPM



## SCHPM

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Canadian Society for History  
and Philosophy of Mathematics

Société canadienne d'histoire et  
de philosophie des mathématiques

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## ABOUT THE SOCIETY

Founded in 1974, the Canadian Society for the History and Philosophy of Mathematics / Société canadienne d'histoire et philosophie des mathématiques (CSHPM/SCHPM) promotes research and teaching in the history and philosophy of mathematics. Officers of the Society are:

*President:* **Glen Van Brummelen**, Quest University, Squamish, BC V8B 0N8, CA, gvb@questu.ca

*Vice-President:* **Elaine Landry**, UC Davis, Davis, CA 95616, USA, emlandry@ucdavis.edu

*Secretary:* **Patricia Allaire**, 14818 60th Ave., Flushing, NY 11355, USA, PatAllaire@gmail.com

*Treasurer:* **Dirk Schlimm**, McGill University, Montréal, QC H3A 2T7, CA, dirk.schlimm@mcgill.ca

*Past President:* **Jean-Pierre Marquis**, Université de Montréal, Montréal, QC H3C 3J7, CA, jean-pierre.marquis@umontreal.ca

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The Society's Web Page ([www.cshpm.org](http://www.cshpm.org)) is maintained by **Michael Molinsky**, University of Maine at Farmington, Farmington, ME 04938, USA, michael.molinsky@maine.edu. The Proceedings of the Annual Meeting are edited by **Tom Archibald**, Simon Fraser University, Burnaby, BC, V5A 1S6, [tarchi@math.sfu.ca](mailto:tarchi@math.sfu.ca). The Society's Archives are managed by **Michael Molinsky** (see above). **Tom Archibald** (see above) serves as CMS Liaison.

*New Members are most cordially welcome; please contact the Secretary.*

## From the President

One of the deepest criticisms of today's academy is the increasing division of the scholarly pie into smaller and smaller, independent, and isolated slices. Those of us trained within mathematics departments have seen first-hand that few research professors can converse with each other in any significant, insightful way about the questions they face in their daily research lives. Other departments may not be so narrowly focused, but the problem is everywhere. The bigger questions, lost in the minute examination of individual research efforts, are seldom asked.

Even the CSHPM's relatively small pie slice has a rather deep cut down its middle, into the two slicelets of history and philosophy of mathematics. This is especially troubling, since many of the identifiable motives for studying each of these fields involve restoring an interest in big questions. Why are certain mathematical questions interesting, and others aren't? What is the ultimate nature of mathematical knowledge? How does culture affect knowledge as it is transmitted? Clearly, we need both history and philosophy to approach answers; in many contexts, it makes little sense even to label the two sub-fields differently.

Our next annual meeting, held jointly with the history and philosophy of mathematics special interest groups of the MAA, aims to heal the gap. Bringing together historians and philosophers at a large conference of mathematics educators (MathFest, Hartford, CT, August 2013), we hope to provide a forum where new and inspiring linkages can be made across our scholarly boundaries. A committee spanning these three organizations (Rob Bradley, Tom Drucker, Bonnie Gold, Maria Zack, and myself) are planning sessions to be held throughout MathFest, including a special session on interactions between history and philosophy of mathematics. We're thrilled to announce that Jeremy Gray, author of a number of books including *Plato's Ghost* (one of the most profound recent crossovers between history and philosophy), will give the Kenneth May lecture. Please note for your calendars that the meeting will take place later in the summer than usual. It will be worth the wait.

It is also my sad duty to let you know that SSHRC has after many years terminated the Aid and Attendance

Grants to Scholarly Associations (AAGSA) program. AAGSA has been responsible for the travel subsidies the CSHPM has been able to provide our members, especially grad students, over the years. The Canadian Federation for the Humanities and Social Sciences has been lobbying on behalf of all the societies that benefited from AASGA; however, SSHRC funding has been under attack for some years now, and we don't anticipate that the program will be restored. We hope that this will not prove to be a barrier to the exciting, and hopefully transformative, meeting next summer in Hartford. See you there!

*Glen Van Brummelen*

## Announcements

Clemency Montelle announces the birth of Aurelie Rose Felicity Montelle on 18 September 2012, weighing 3.94kg and measuring 57cm. Aurelie is described as "a sweet little bundle of mellowness in a household full of boys!"

**New positions:** CHSPM Past-President Jean-Pierre Marquis became Vice-Dean at the Université de Montréal on 1 July 2012. Bonnie Gold is now the governor of the New Jersey Section of the MAA. Amy Shell-Gellasch is Assistant Professor of Mathematics at Hood College in Frederick, Maryland.

Len Berggren presented the Arabic text of parts of Book IV of al-Kashi's compendium of calculation techniques, *The Key to Reckoning*, at the Mellon-Sawyer Seminar on Rationalist Sciences in Islam: Astronomy, Optics, Life Sciences and Mathematics, held at Washington University in St. Louis, 28–29 April 2012. Other presenters included: Asad Q. Ahmed, Jon McGinnis, Robert Morrison, Nahyan Fancy and Justin Sterns. Len also reports that his *Episodes in the Mathematics of Medieval Islam* has been translated into German and published (Springer-Verlag, 2011) with a number of changes as *Mathematik im mittelalterlichen Islam*.

Graduate student Bruce J. Petrie published his first peer-reviewed article, "Leonhard Euler's Use and Understanding of Mathematical Transcendence," *Historia Mathematica* 39, no. 3 (2012): 280–291. He presented an early version of the paper at CSHPM's 2010 annual meeting, and he thanks attendees for their

helpful comments and feedback during the presentation.

Loren Graham's (MIT, Emeritus) book (co-authored with Jean-Michel Kantor), *Naming Infinity*, was honored at the 2011 Moscow Non-Fiction Book Fair as one of the ten best books published in the Russian language in 2011. The book was also the major reason that the presidium of the Russian Academy of Sciences reversed its earlier resolution in which it censured, for ideological reasons, the great Russian mathematician Nikolai Luzin, the major figure in the book. Luzin has been restored to full honor as founder of the Moscow School of Mathematics. Graham and Kantor were invited to Russia for a book tour during which they gave 18 lectures on the book in three cities.

The HOMSIGMAA fall book club selection is Benjamin Wardhaugh's *How to Read Historical Mathematics*. To be rostered into the wiki for discussion, email Amy Shell-Gellasch ([shell-gellasch@hood.edu](mailto:shell-gellasch@hood.edu)). In preparation for the joint CSHPM, HOMSIGMAA, and POMSIGMAA meeting in August 2013, the spring selection will be Jeremy Gray's *Plato's Ghost*.

HOMSIGMAA's contributions to the digitalization of Paul Halmos's photographs (see the article in this issue) were so successful that it will also fund the restoration of "Teaching High School Mathematics," an educational series of 47 reels of 16mm film featuring Max Beberman and developed in 1952 with funding from NSF. Beberman taught mathematics at the University of Illinois's Laboratory High School and at the University of Illinois in the 1950s and 1960s. An advocate of mathematics education reform, he played an essential role in developing what became known as the "new math." To view the films, visit [www.cah.utexas.edu/collections/math\\_digital\\_collections.php](http://www.cah.utexas.edu/collections/math_digital_collections.php). Click on the Beberman icon, then the video you want to see, then "Click to Access Media."

Laurence Kirby of Baruch College (CUNY) announces *Plimpton 322: The Ancient Roots of Modern Mathematics*, a half-hour documentary film designed to enthrall university and high school students, especially minority students, to pursue mathematical studies. With New York City as backdrop, the film takes viewers on a tour of our mathematical debt to ancient cultures in the Middle East, Asia and Africa. We witness their ideas still playing crucial roles in our society and

21st-century technology. At the center of the film is a 4,000-year-old cuneiform tablet known as Plimpton 322, which was excavated in Iraq around 1920 and now has its home in New York. See the film at [faculty.baruch.cuny.edu/lkirby/](http://faculty.baruch.cuny.edu/lkirby/).

Catarina Dutilh Novaes and Amirouche Moktefi are organizing a special session, “What is/was logic? Historical perspectives” for the Universal Logic Congress, to be held in Rio de Janeiro, 3–7 April 2013. Anita Feferman will be the keynote speaker. Submit abstracts (ca. 1,000 words) to [history.unilog2013@gmail.com](mailto:history.unilog2013@gmail.com) by 1 November 2012. For information on the conference, see [uni-log.org/start4.html](http://uni-log.org/start4.html).

The journal *PRIMUS* announces a special issue on the use of history of mathematics to enhance the instruction of undergraduate mathematics, guest edited by Kathleen Clark (FSU, [kclark@fsu.edu](mailto:kclark@fsu.edu)) and John Thoo (Yuba, [jthoo@yccd.edu](mailto:jthoo@yccd.edu)). Submissions may be theoretical or empirical and should align with the aims of the International Study Group on the Relations between the History and Pedagogy of Mathematics. Referees are also needed. Manuscripts should be 10–12 pages in length and are due by 31 March 2013. For more information, contact the guest editors.

Michel Serfati announces the first semester program for the annual seminar on Epistemology and History of Mathematical Ideas, held Wednesdays at 2:00 pm at the Institut Henri Poincaré in Paris: Patrick Popescu-Pampu (Lille), “Qu’est-ce que le genre?” on October 24; Michel Serfati (IREM-Univ. Paris VII), “Sur l’abstrait, le concret, et l’axiomatique : les théorèmes de représentation de Stone (1936–1938)” on November 14; Jenny Boucard (Centre François Viète & Institut de Mathématiques de Jussieu), “Usages et pratiques autour des congruences en France de 1801 à 1850” on November 28; Maurice Margenstern (Metz), “Calculs, temps et espace” on December 12; Monique Lejeune-Jalabert (Versailles-Saint Quentin), “Singularités et développements en séries” on January 23; and Michel Serfati (IREM-Univ. Paris VII), “Symbolisme et harmonie en mathématiques. L’avènement des structures chez Leibniz” on January 30.

The first workshop of the newly formed Philosophy of Mathematics Association, Inc. (PMA), was held October 26 at Notre Dame University. Invited speakers were Steve Awodey (Carnegie Mellon), “Homotopy Type Theory and Univalent Foundations”; Danielle

Macbeth, “The Puzzle of Logic in Relation to Mathematics”; and Jeremy Heis (UC Irvine), “Why Did Geometers Stop Using Diagrams?” PMA officers are: Mic Detlefsen (President), Colin McLarty (Vice-President), and Dan Isaacson (Treasurer). Board members include: Patricia Blanchette, Jessica Carter, Solomon Feferman, Elaine Landry, Mathieu Marion, Erich Reck, and Greg Restall.

The Forum for the History of the Mathematical Sciences (FoHoMS) again will hold a luncheon, sponsored by the Legacy of R. L. Moore Project, during the 2012 History of Science Society Annual Meeting in San Diego, California, November 15–18. This is a joint meeting with the Philosophy of Science Association. History and philosophy of mathematics on the HSS program includes: a plenary session on “History and Philosophy of Science: 50 Years of Thomas Kuhn’s *Structure of Scientific Revolutions*,” with participation by Alan Richardson; a session on “Interventions in the Exact Sciences,” chaired by Massimo Mazzotti and including a talk by Madeline Muntersbjorn; and a session on “Physics between Engineering and Philosophy,” including a talk by Alan Richardson. Other individual talks of interest include Brittany Shields, “Placing Mathematics: German Émigrés and the American Mathematical Community, 1933–1946”; Tofigh Heidarzadeh, “The evolution of observational astronomy in colonial America”; Harald Siebert, “Transformation of Euclid’s Optics in Late Antiquity”; Chen-Pang Yeang, “Two Mathematical Approaches to Random Fluctuations”; Frans van Lunteren, “‘Mathematics is inhuman like every diabolic machine’: Paul Ehrenfest as a critic of modern science and culture”; Robin Rider, “‘Dans un très-bel ordre’: Reframing Early Modern Mathematical Manuscripts in Print”; Mathew Jones, “Mathematics and the Dissipation of Order [during the Baroque period]”; and Andrew Fiss, “(En)gendering American mathematics: Mathematics education at male colleges and female seminaries, 1819–1840.”

Jim Cushing’s family, friends, students, and colleagues are pleased once again to solicit nominations for the James T. Cushing Prize in the History and Philosophy of Physics. A nomination should consist of a brief description of the significance of the nominated work and such information about the author as the nominator might think helpful to the evaluation committee (e.g., an abbreviated c.v.). The 2013

deadline is 31 January. See [www.nd.edu/~cushpriz/](http://www.nd.edu/~cushpriz/).

Scholars and artists are invited to apply for travel fellowships and grants to the Bakken Museum in Minneapolis. The awards of US\$500–1,500 are to be used to help defray the expenses of travel, subsistence, and other direct costs of conducting research at the Bakken for researchers who must travel to the Twin Cities and pay for temporary housing in order to conduct research at the Bakken. The next deadline for application is in February 2013. For further information, contact Juliet Burba ([burba@thebakken.org](mailto:burba@thebakken.org)).

The Southern Association for the History of Medicine and Science (SAHMS) will hold its fifteenth annual meeting on 21–23 February 2013, in Charleston, South Carolina, hosted by The Waring Historical Library, Medical University of South Carolina. See [www.sahms.net/HTML/2013\\_conference.html](http://www.sahms.net/HTML/2013_conference.html).

The 24th International Congress for the History of Science, Technology and Medicine will be held at the University of Manchester on 22–28 July 2013. The Congress, held every four years, is the world's largest gathering of historians of science, technology and medicine. The theme of the Congress is "Knowledge at Work" and proposals for Symposia (themed panel sessions) can be submitted until 30 April 2012. From 1 May until 30 November 2012 offers of individual papers can be made. See [ichstm2013.com](http://ichstm2013.com).

2012 issues of the International History and Philosophy of Science Teaching Group Newsletter are available at [ihpst.net/newsletters/](http://ihpst.net/newsletters/).

The latest list of recent doctoral dissertations pertaining to the history of science may be viewed at [www.hsls.pitt.edu/histmed/dissertations](http://www.hsls.pitt.edu/histmed/dissertations).

World History of Science is an effort to index online resources, hosted by the University of Melbourne's e-Scholarship Research Centre. See [www.dhst-whso.org](http://www.dhst-whso.org).

See [www.bshm.org](http://www.bshm.org) for information on upcoming BSHM meetings.

As part of the celebrations commemorating 50 years of publishing for *The British Journal for the History of Science*, two past editors, Simon Schaffer and Janet Browne, have selected nine papers that illustrate how the journal has not only reflected the field but played a role in defining it. Access to all nine papers is free until 31 December 2012. See

[www.bshs.org.uk/publications/viewpoint](http://www.bshs.org.uk/publications/viewpoint).

An exhibit on Alan Turing's question, "Can machines think?" runs until December 20 in the Collection of Historical Scientific Instruments at Harvard University. Turing's parlor game, in which an interrogator would converse with two individuals, trying to determine which was the human and which the computer, is turned into a competition. Visitors are also invited to act as the interrogator in an instantiation of a Turing Test featuring the AI program A.L.I.C.E.

Niels Bohr Library and Archives staff have just added the ability to search by any keyword to the American Institute of Physics's online oral histories. For example, someone researching the "atomic bomb" will find 158 interviews (out of about 770 online) that mention this term somewhere in the interview. The Library also notes that the Richard Feynman interview, added to the online collection in March, has quickly become the most popular of all the online oral histories. See [www.aip.org/history/ohilist/transcripts.html](http://www.aip.org/history/ohilist/transcripts.html).

The 56th annual meeting of the Midwest Junto for the History of Science will be held April 5-7, 2013 at the University of Notre Dame near South Bend, IN. Presentations are welcomed on the history and philosophy of science, technology, and medicine. Graduate students are strongly encouraged to participate. Contact Peter Ramberg, [ramberg@truman.edu](mailto:ramberg@truman.edu) with questions.

## Joint AMS/MAA Meetings in San Diego

A number of events in history and philosophy of mathematics have been planned for the Joint Mathematics Meetings, to be held in San Diego, California, January 9–12, 2013. More information can be found on the MAA or AMS websites: [www.maa.org](http://www.maa.org) or [www.ams.org](http://www.ams.org).

Wednesday, 9 January, 8:00–10:55: MAA Contributed Papers Session on "Writing the History of the MAA II," organized by Victor J. Katz, Janet Beery, and Amy Shell-Gellasch.

Wednesday, 9 January, 14:15–15:45: HOMSIGMAA Special Presentation, "The Paul R. Halmos Photograph Collection of the Archives of American Mathematics," hosted by Amy Shell-Gellasch and Carol

Mead.

Wednesday, 9 January, 17:00–19:15: HOMSIGMAA Presentation, “Geometry and Baroque Architecture in Turin, Italy,” by Cynthia Woodburn; Reception and Business Meeting; and Guest Lecture, “Leonardo Fibonacci, *Liber abaci*, and the Rise of the Modern Commercial World,” by Keith Devlin.

Thursday, 10 January, 8:00–11:50, and Friday, 11 January, 13:00–17:50: AMS Special Session on “The Influence of Ramanujan on His 125th Birthday,” organized by George Andrews, Bruce Berndt, and Ae Ja Yee.

Thursday, 10 January, 9:00–11:00, and Saturday, 12 January, 9:00–11:00: MAA Minicourse on “Heavenly Mathematics: The Forgotten Art of Spherical Trigonometry,” presented by Glen Van Brummelen and Joel Silverberg. (NOTE: You must preregister for this course.)

Thursday, 10 January, 13:00–16:15: MAA Contributed Papers Session on “The History of Geometry, Its Applications, and Their Uses in the Classroom,” organized by Amy Shell-Gellasch and Glen Van Brummelen.

Thursday, 10 January, 18:00–19:30: AMS-MAA Special Film Presentation, “Taking the Long View: The Life of Shiing-shen Chern.”

Friday, 11 January, 9:00–10:55: MAA Panel Discussion on “Using Mathematical Archives and Special Collections for Research and Teaching,” with Carol Mead, Fred Rickey, Dominic Klyve, Victor Katz, Peggy Kidwell, and Shirley Gray; organized by Amy Shell-Gellasch and Janet Beery.

Friday, 11 January, 13:00–14:10: MAA General Contributed Paper Session on “History and Philosophy of Mathematics,” organized by Stephen Davis, Gizem Karaali, and Douglas Norton.

Friday, 11 January, 13:00–16:55: MAA Session on “Philosophy, Mathematics, and Progress,” organized by Thomas Drucker and Dan Slougher.

Friday, 11 January, 13:00–18:25, and Saturday, 12 January, 13:00–17:55: AMS-MAA Special Session on History of Mathematics, organized by Patti Hunter, Deborah Kent, and Adrian Rice.

Friday, 11 January, 17:30–19:30: POMSIGMAA Reception, Business Meeting, and Guest Lecture, “A

Guide for the Perplexed: What Mathematicians Need to Know to Understand Philosophers of Mathematics,” by Mark Balaguer.

*Amy Shell-Gellasch*

## Call for Papers: *Science & Education*

Recent years have seen increasing interest in the role of the history and philosophy of mathematics in the teaching of mathematics at all levels. Although the history and philosophy of mathematics can be thought of as separate domains, they are closely linked to one another, as they are also to more general issues of history, philosophy, and culture.

For this reason, a focused treatment of history and philosophy of *mathematics* can also enlighten science educators as well as mathematics educators, and, indeed, it is important for those involved in science education to understand how mathematics and its history relates to the teaching of science, and conversely how the teaching and learning of mathematics engages with science.

Thus, *Science & Education* announces a special issue on History and Philosophy of Mathematics in Mathematics Education. Any academic doing research in the history and philosophy of mathematics and their relation to mathematics education is invited to contribute, and both theoretical and empirical studies are welcome. Examples of topics include: The role of history and philosophy of mathematics in teacher training; Theoretical and/or conceptual frameworks for integrating history and/or philosophy into mathematics education; Classroom experiments or teaching materials that implement history or philosophy of mathematics; Use of original sources in the classroom and their impact on learning mathematics; The historical relationship of mathematics to science and technology, and its philosophical and educational implications; or Philosophical lessons from ethnomathematics, and ways these can contribute to mathematics education.

The deadline for submission is **December 1, 2012**. Submit manuscripts to [www.editorialmanager.com/](http://www.editorialmanager.com/)-sced, and choose MATHEMATICS as the mss type.

Questions and inquiries may be directed to the guest editors: Victor J. Katz (*vkatz@udc.edu*); Uffe Thomas Jankvist (*utj@ruc.dk*); Michael N. Fried (*mfried@bgu.ac.il*); and Stuart Rowlands (*stuart.rowlands@plymouth.ac.uk*).

*Victor J. Katz*

## Book Review: *Sophie's Diary*

*Sophie's Diary: A Mathematical Novel*, by Dora Musielak, 2nd ed., Washington, DC: Mathematical Association of America, 2012, 291 pp. \$49.95

In the author's own words, this book is "a mathematical novel" and "a work of historical fiction." Her work is enjoyable, well-written, and somewhat interesting. The main part (240 pages) is the imaginary diary of Sophie, a French girl freely inspired by Sophie Germain, who comes of age and discovers her love for mathematics during the French Revolution. Indeed, the diary starts on April 1, 1789 (on her thirteenth birthday), and ends on December 29, 1794. The rest of the book includes several appendices of a more scientific and mathematical nature: the Author's Note, a biographical sketch, a timeline of Germain's life, and the bibliography.

The diary part is interesting and engaging. The crescendo of the young woman's love for math contrasts with the crescendo of the revolution's cruelty and sense of instability. Mathematics offers Sophie, who lives in the center of Paris and whose father is involved in politics, a way to escape the terror of what is happening around her, the fear that every child experiences when struck by the realization that parents are merely human and not able to stop bad things from happening. The author strikes a balance between Sophie's growth as an individual and as a mathematician, using an artful combination of mathematical, historical, and personal topics in the diary. Given that very little is known about the life of Sophie Germain in this period and that it is not clear how and when she learned the mathematics she knew so well, Musielak does a great job at filling in the blanks in a believable way. However, the last entry, which is quite long, sounds artificial and somewhat unrealistic. While it is true that this is a fictional work and that Sophie is a very smart young lady, would she really

have, after only a few years of haphazardly studying mathematics and its history, the ability to summarize so well what she had studied, picking exactly the most salient points?

While she enjoyed the fictional diary, it is difficult for this reviewer to answer two basic questions about this book: What is its goal? What is its target audience?

Dr. Musielak tries to address the first question in the Author's Notes. But should the author be writing an explanation for her work? A book that achieves its goal is self-explanatory and creates an "Aha" moment for the satisfied readers. This book, as pleasant as it is, can leave readers with a feeling of "so what"? And this leads to the question about the audience. Is this book for researchers in history of mathematics? Clearly not, as it does not contain any original piece of information and it is a work of fiction. The sources listed in the bibliography and in the Author's Note are much more suitable for providing a rigorous presentation of Sophie Germain and her contributions to mathematics, especially regarding Fermat's Last Theorem (e.g., the works by Laubenbacher and Pengelley). Is the book aimed at general audiences? Yes and no. It is possible to read the diary while skipping the mathematical formulas, some of which require at least some background in calculus. But doing so lessens the reader's perception of the intensity that drives Sophie. Some topics (e.g., prime numbers) appear again and again, and every time she makes more progress, her manipulation of formulas and concepts becomes stronger and more daring, as she better owns the material. Is this book aimed at young girls to encourage them to study mathematics? Sophie is socially awkward, a little haughty (like most teenagers), and the only guy in her life (young Mr. LeBlanc) does not really like talking to her and even tries to avoid her. She does not like the way she looks, to the point of avoiding mirrors. Doesn't all of this reinforce the stereotype that girls who like mathematics are somewhat "geeky"? Musielak puts a lot of emphasis on Sophie's drive to study and learn on her own, especially after reading Archimedes' biography. While this can set a great example, it might also make a young reader feel inadequate.

In conclusion, this book is similar to a handful of Fig Newton bars: there is the name of a great mathematician, the pages do have some nutritional value and are

very tasty, but they are not a main meal.

*Antonella Cupillari*

## MAA *Convergence* Asks, “Who’s That Mathematician?”

The Mathematical Association of America’s (MAA’s) online math history magazine, *Convergence*, invites you to take an alphabetical photo tour of prominent 20th-century mathematicians (and their mathematics) by playing “Who’s That Mathematician?” every week through March 2013. To see photos of mathematicians taken by well-known mathematical researcher, expositor, and educator Paul R. Halmos (1916–2006) from the 1950s through the 1980s, visit [mathdl.maa.org/mathDL/46/](http://mathdl.maa.org/mathDL/46/). Look for six newly-posted photographs of mathematicians every Monday morning and see how many you can identify without looking at the captions beneath the photos.

Halmos enjoyed snapping photographs of mathematicians he met around the world and at his various home campuses in the United States, resulting in a collection of thousands of photographs. In 2011, 342 of Halmos’s photos were digitized by the Archives of American Mathematics (AAM), Dolph Briscoe Center for American History, University of Texas, Austin, under the direction of Archivist Carol Mead and with a grant from HOM SIG-MAA. MAA *Convergence* has posted six photos per week since early 2012. A sampling of the collection is provided below, courtesy of AAM and *Convergence*. For permission to reproduce photographs in the Paul R. Halmos Photograph Collection, contact [www.cah.utexas.edu/collections/math\\_about.php](http://www.cah.utexas.edu/collections/math_about.php).

We invite you to view the photos and then share what you know about them by using “Discuss this article” at the top or bottom of each webpage, or, better, by directly contacting Janet Beery or Carol Mead.<sup>1</sup> Please provide or correct names, dates, locations, and events (e.g., conference, invited speaker, social visit, etc.). Please also share any other pertinent information, fond memories, mathematical stories, etc. connected to the photographs. And be sure to look for new photos in *Convergence* each week throughout the

<sup>1</sup>At [janet\\_beery@redlands.edu](mailto:janet_beery@redlands.edu) and [carolmead@austin.utexas.edu](mailto:carolmead@austin.utexas.edu), respectively.

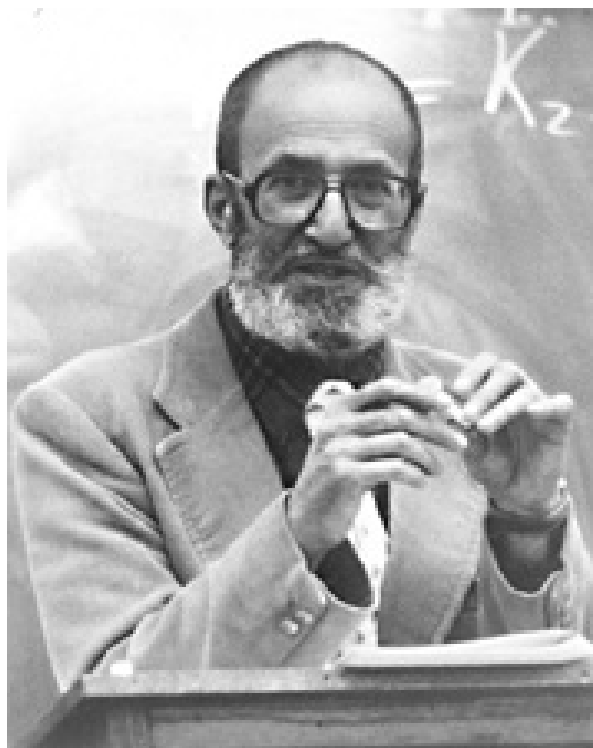


Figure 1: Paul Halmos.

year!

Besides doing important research in operator theory and functional analysis, Paul R. Halmos wrote books, such as *Finite-Dimensional Vector Spaces* (1942) and *Naive Set Theory* (1960), that organized and made accessible fundamental areas of mathematics. He also wrote autobiographical works, such as *I Want To Be A Mathematician: An Automathography* (Springer, 1985) and *I Have a Photographic Memory* (AMS, 1987), that helped document and define the 20th-century (western) mathematical community. (Photo source: MAA *Convergence* Portrait Gallery)

Halmos photographed (from left to right) Phillip S. Jones (1912–2002), Bartel van der Waerden (1903–1996), and T. H. Hildebrandt (1888–1980) on April 2, 1968, in Ann Arbor, Michigan. Jones (Michigan) and van der Waerden (Leipzig, Zürich) are well known as historians of mathematics. Hildebrandt (Michigan) is best known for giving the first general proof of the principle of uniform boundedness for Banach spaces in 1923 and for serving as president of the American Mathematical Society (1945–1946). (Photo source: Archives of American Mathematics, University of Texas at Austin)





Figure 2: Jones, van der Waerden, Hildebrandt.



Figure 3: Coxeter, May, Sharp.

Kenneth O. May (center, 1915–1977) and his University of Toronto colleagues, H.S.M. “Donald” Coxeter (left, 1907–2003) and William T. Sharp (right, 1927–1972), were photographed by Halmos in September 1969 in Toronto. One of the founders and leaders of both the International Commission for the History of Mathematics (ICHM) and the Canadian Society for History and Philosophy of Mathematics (CSHPM), May received his Ph.D. from UC Berkeley in 1946 and spent most of his career as a professor of mathematics at the University of Toronto. ICHM honors May with its Kenneth O. May Prize and Medal, CSHPM with its Kenneth O. May Lecture. (Photo source: Archives of American Mathematics, UT Austin)

Ubiratan “Ubi” D’Ambrosio was photographed by



Figure 4: Ubi D’Ambrosio.

Halmos at the Seventh Brazilian Mathematics Colloquium in Poços de Caldas, Brazil, in July of 1969. One of the founders and leaders of the cultural and mathematical area of study known as ethnomathematics, D’Ambrosio earned his Ph.D. in functional analysis at the University of São Paulo, Brazil, in 1963, and now is professor emeritus of mathematics at the State University of Campinas (UNICAMP) in São Paulo. (Photo source: Archives of American Mathematics, UT Austin)

*Janet Beery*

## Book Review: *A Wealth of Numbers*

*A Wealth of Numbers: An Anthology of 500 Years of Popular Mathematics Writing*, by Benjamin Wardhaugh, Princeton University Press, 2012, xv + 370 pp. ISBN 978-0-691-14775-8, \$45.

Unlike collections of nineteenth-century English poetry and twentieth-century American plays, there has never been an abundance of mathematical antholo-

gies.<sup>2</sup> The Wardhaugh book is a welcome addition to anthologies that have preceded it, such as James Newman’s four-volume set the *World of Mathematics* (1956), Clifton Fadiman’s *Fantasia Mathematica* (1958) and *Mathematical Magpie* (1962), Rudy Rucker’s *Mathenauts: Tales of Mathematical Wonder* (1987), and *Imaginary Numbers: An Anthology of Marvelous Mathematical Stories, Diversions, Poems, and Musings* (1999) edited by William Frucht. Each analekta contains articles or excerpts from articles or books related in some way (however tenuous) to some aspect of mathematics. The editors each had their own rationales for choosing which selections to include. Wardhaugh has chosen mathematical works aimed at ordinary people—in particular, writings in English from the mid-sixteenth century to the present, from sources that would appeal to readers with at least a secondary school mathematics education. The result is an historical panoply showing the subject through the eyes of those with an avid interest in the subject.

There is a chapter on recreational mathematics with puzzles and games from the works of Henry van Etten, Jacques Ozanam, Henry Dudeney, and material from the NRIC website set up by the University of Cambridge as part of the Millennium Mathematics Project. The site is a valuable resource for classroom material and well worth visiting. There is a chapter on arithmetic and algebra, containing excerpts from Robert Recorde’s *The Ground of Arts*, and sections on the zig-zag method for multiplying, extracting square roots, the rule of three in verse, and a solution to cubic equations. There is a chapter on problems and solutions from such sources as *The Ladies’ Diary*, *The Analyst*, *The Boy’s Own Book*, and *The Girl’s Own Book*. There is a chapter on geometry and trigonometry with material from Recorde’s *The Pathway to Knowledge*, and sections on the Pythagorean theorem, definitions of the trigonometric functions, spherical geometry, and Napier’s rules. A chapter on mathematical instruments contains information on Napier’s bone, telescopes, sundial construction, and star clocks. Another chapter contains vignettes from the lives of mathematicians, including Kepler, New-

<sup>2</sup>A catalogue, compiled by Alex Kasman of the College of Charleston and containing references to over a thousand works of “mathematical fiction,” can be accessed at <http://math.cofc.edu/faculty/kasman/mathfict/>.

ton, Pythagoras, Emmy Noether, Euler, Hardy, Littlewood, and Ramanujan. There is a chapter about practical rules for measuring various quantities. The chapter on mathematics education contains excerpts from Isaac Barrow’s 1660 edition of Euclid’s *Elements*, Lewis Carroll’s *Game of Logic*, George Polya’s *How to Solve It*, and an exquisite selection from Eleanor Mildred Sidgwick’s 1912 article on “Higher mathematics for women.” The book ends with a chapter on mathematicians in fiction.

The collection includes works from a diverse set of authors: Edwin A. Abbott, W. W. Rouse Ball, Charles Boyer, Margaret Cavendish, John Dee, Augusta Jane Evans, Richard Feynman, Oliver Lodge, Horatio Nelson Robinson, Kim Stanley Robinson, George Bernard Shaw, J. J. Sylvester, B. L. van der Waerden, and Voltaire. Although written for the general reader who is interested in mathematics, the collection is apropos for those who are more mathematically oriented as well.

The excerpts included are often very short and give the reader a mere taste of the original source material. Nevertheless, they rarely fail to be of interest. Although many of the sources may be unavailable to the general reader, each excerpt is well referenced. Each chapter contains an introduction and a mini biography for each author. There is an adequate index. Many of the selections have been modernized and, when necessary, corrected. When applicable, explanatory notes are included. Those expecting to see Professor Morarty’s proof of the binomial theorem or a few stanzas from J. J. Sylvester’s “Rosalind” will be disappointed. For others, this well-thought-out, eclectic collection will provide hours of enjoyable reading.

*Jim Tattersall*

## **Book Review: *Mathematics in Victorian Britain***

*Mathematics in Victorian Britain*, edited by Raymond Flood, Adrian Rice, and Robin Wilson, Oxford: Oxford University Press, 2011, x + 466 pp. \$55.

The strength of a collected edition can be found in the expertise of its contributors. Raymond Flood, Adrian Rice (one of our own members), and Robin

Wilson have assembled a dream team of specialists, each speaking to his or her own forte. There are eighteen chapters plus an introduction, including content chapters from each of the editors. In addition to Rice, we find contributions from CSHPM members Tony Mann, June Barrow-Green, and Karen Hunger Parshall. Mann (with Alex D. D. Craik) surveys the prospects for mathematicians in Victorian Scotland in “Scotland: Land of opportunity but few rewards.” Barrow-Green informs us about the exodus of wranglers to the colonies in “Wranglers in exile: Mathematics in the British Empire,” and Parshall makes her case that British mathematicians felt free to create new mathematical objects in “Victorian algebra: The freedom to create new mathematical entities.” Unsurprisingly, we also find chapters by Ivor Grattan-Guinness, Jeremy Gray, Tony Crilly, and Alex D. D. Craik. The dream team also includes Keith Hannabuss, Sloan Evans Despeaux, Allan Chapman, Doron D. Swade, M. Eileen Magnello, and Amirouche Moktefi.

Anyone with an interest in history of mathematics, especially British mathematics, will find this text a pleasurable read. The scholarship is exemplary—although literature on mathematics in Victorian Britain can be found, especially if one has access to a good library, this text brings together in one volume expertise that would be tedious to find elsewhere. The book is organized into two main sections: geography and the different branches of mathematics. Institutional development figures prominently in the first half of the text and the influence of algebra and symbolic manipulation in the latter. The insular nature of early Victorian Britain is a theme that emerged throughout the whole volume. I expected a chapter dedicated to women and their opportunities to learn, research, and publish mathematics. Instead, individual contributors were given the freedom to discuss this issue. Some did so a great deal. For instance, Magnello’s chapter on vital statistics discusses Florence Nightingale. On the other hand, Flood did not take the opportunity to discuss George Salmon’s refusal to admit women into Trinity College, Dublin. Perhaps a separate chapter on women and Victorian mathematics would have been repetitive; the editors acknowledge the omission in the preface and attribute it to a lack of space.

Historians of mathematics now have an easily accessi-

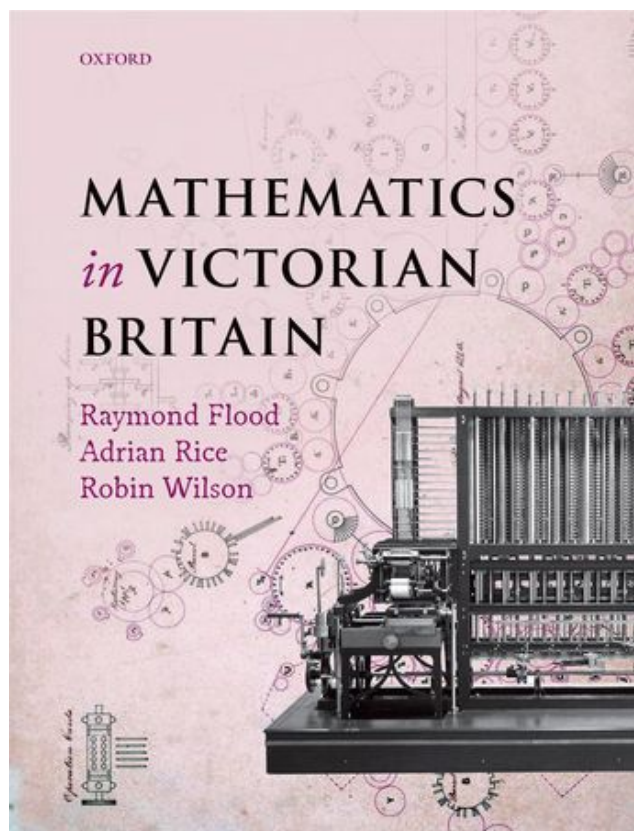


Figure 5: Mathematics in Victorian England

ble source for including Victorian Britain in their undergraduate and graduate courses. Individual chapters can be assigned for reading in an undergraduate survey course, and the text as a whole can be used to construct a specialized graduate course. Any historian of mathematics familiar with recent historiography will find this to be a gem of a resource because Flood, Rice, and Wilson have constructed a text that surveys this unique paradigm or epistemic culture that strongly contrasts with the continental mathematics of the same period. If your goal is to teach students how mathematics in different regions with different politics and different motivations can create different mathematics, then *Mathematics in Victorian Britain* is the text you have been waiting for. However, those looking for detailed mathematics in a history text akin to William Dunham’s *Journey Through Genius* will need to look elsewhere. The text includes a chapter on logic by Grattan-Guinness that would be of interest to philosophers, but the text as a whole offers more to the historian.

While every chapter is truly outstanding, one chapter in particular strikes an antagonistic tone. Jeremy

Gray's concluding chapter confesses his "polemical purposes." He cautions that, recent scholarship aside, much of the historical actors' achievements have been exaggerated and they themselves had overly inflated egos. He attributes this to a British sense of superiority and national power and influence in other domains. He also warns that scholarship within history of science tends to overlook the mathematics, leaving readers wondering whether mathematics was even involved in the larger story. Gray declares that historians should look at pure mathematics in Victorian Britain as a "particular kind of failure" and a case of "under-development." It is precisely this "under-development" in pure mathematics and the different emphasis on the style of mathematics being practiced, compared to their continental contemporaries, that makes Victorian Britain of great interest to historians of mathematics. This book should find a place in the personal library of many historians and mathematicians.

*Bruce J. Petrie*

## **Book Review:** *The Dawn of Software Engineering*

*The Dawn of Software Engineering: From Turing to Dijkstra*, by Edgar G. Daylight, Heverlee, Belgium: Lonely Scholar, 2012, 248 pp. \$40.

*The Dawn of Software Engineering* consists of two introductory chapters (pages 1–42) followed by an extended version of a paper that appeared in *The Computer Journal* (pages 43–78), four oral histories (pages 79–186), and a final summary chapter (pages 187–197). There are then fourteen pages of endnotes, a bibliography of 316 entries, and a six-page index. The oral histories are verbatim transcriptions of interviews with Tony Hoare, Niklaus Wirth, Barbara Liskov, and Peter Naur.

The work assesses the impact of Turing's work on early computer programming and on Dijkstra's quixotic views of this endeavor. It is not clear what this analysis has to do with software engineering, at least as this term is understood in industrial software development projects. That said, the book does indeed describe a dawn.

In the course of his considerations, the author documents carefully, if unwittingly, the moment of divergence between computer programming as studied by academics and computer programming as practiced by people writing code for a living. There are profound insights into this schism in each one of the oral histories, particularly in the Wirth interview. Unfortunately, this line of inquiry is not pursued.

Rather, the author pursues topics of a more abstract nature, such as the inclusion of recursion in programming languages, the generality of computer architectures, the nature of unsolvability and incomputability, and the applicability of mathematics and formal logic to the construction of computer programs. The author finds considerations of these topics in the writings of Turing and his intellectual contemporaries, as well as in Dijkstra's work. He concludes 1) that Dijkstra developed these topics independently of Turing et al.; and 2) that the impact of these themes on computer programming was much greater through Dijkstra's telling than through Turing's.

Throughout the book, "computer programming" is to be understood as the creation of code rebuses on the blackboard in the coffee room and not the creation of commercial software. It is certain that very, very few of the individuals creating software used in any production setting were impacted in any way by the work of either Turing or Dijkstra.

Yet, it is exactly because the author considers computer programming exclusively from the point-of-view of the academy that we are provided with a glimpse of the first crack between theoretical and applied computer programming. The author cites many properties of programming and computers that were taken as given in scholarly discussions but were not found in any non-academic reality. To cite just two examples, any FORTRAN programmer worth his or her salt could and would build a recursive subroutine if needs be and the IBM System 360 contained a large collection of machine instructions whose only utility was support of business data processing.

Pedagogical code fragments capturing the seminal ideas of machine computation, such as execution isolation, dead lock prevention, system thrashing and process synchronization, have been analyzed *ad nauseam* by historians of computing. What has not, in the reviewer's view, been sufficiently studied are at-scale

bodies of code; code written to please a customer, not win the approval of Turing or Dijkstra.

*The Dawn of Software Engineering* capably describes the turmoil in the academy as it came to grips with a new intellectual construct called a computer program. Of even greater value, the four oral histories in the book enable the reader to see the long waves of this turmoil through the eyes of four deeply embedded and very different reporters at the scene. We await the other story that all four with remarkable prescience foresaw.

*Scott Guthery*

## Quotations in Context

“Mathematics is the art of giving the same name to different things.” – Henri Poincaré

In 1908, the Fourth International Congress of Mathematicians was held in Rome. At the Congress, the mathematician Jean-Gaston Darboux presented an address written by Poincaré entitled “L’avenir des mathématiques,” and Poincaré included the paper as a chapter in his book *Science et méthode*, published the same year. An authorized English translation by George Bruce Halsted appeared as the chapter “The Future of Mathematics” in *The Foundations of Science*, first published in 1913.

The chapter begins by stating the importance of studying the history of mathematics: “To foresee the future of mathematics, the true method is to study its history and its present state.” Poincaré briefly describes the historical evolution of the meaning of “solution in mathematics,” showing that each time it appeared every possible problem had been solved, a change in accepted solution methods (such as the shift from ruler and compass constructions to extraction of roots) would open the way for new and wider exploration.

Poincaré spends some time exploring the underlying motivation and necessity for the study of mathematics. In particular, he emphasizes that despite its utility to physics and other sciences, the ultimate motivation for the study of mathematics and the identification of new problems to pursue must come from within the subject itself:

Shall it be said that we geometers should limit ourselves to awaiting orders and, in place of cultivating our science for our own delectation, try only to accommodate ourselves to the wants of our patrons? If mathematics has no other object besides aiding those who study nature, it is from these that we should await orders. Is this way of looking at it legitimate? Certainly not; if we had not cultivated the exact sciences for themselves, we should not have created mathematics the instrument, and the day the call came from the physicist we should have been helpless.

Citing Ernst Mach’s characterization of science as producing “economy of thought,” Poincaré pursues the same idea in mathematics. He emphasizes the importance of finding common ideas and properties, and how the labeling of those properties with a word or brief phrase allows arguments and explanations to be condensed without losing rigor or clarity. He even states that the proper measurement of the importance of a discovery in mathematics is “the amount of thought it permits us to spare.”

Poincaré offers a specific example in the short phrase “uniformity of convergence,” explaining how these few simple words, when properly understood, immediately evoke (and therefore abolish the need to present) the complete and rigorous mathematical definition. It is at this point that the subject quotation of this column appears:

We have just seen by one example the importance of words in mathematics, but many others could be cited. It is hard to believe how much a well-chosen word can economize thought, as Mach says. Perhaps I have already said somewhere that mathematics is the art of giving the same name to different things. It is proper that these things, differing in matter, be alike in form, that they may, so to speak, run in the same mold. When the language has been well chosen, we are astonished to see that all the proofs made for a certain object apply immediately to many new objects; there is nothing to change, not even the words, since the names have become the same.

Out of context, it is possible to misinterpret “giving

the same name to different things” as saying that words in mathematics are used in confusing or misleading ways, using the same word to label very different concepts. However, it is clear that Poincaré’s intent is very different: he is instead emphasizing that otherwise completely different objects can share some similar structures and properties, and mathematics can use a terse word or phrase to identify and describe in detail these common features.

Almost every modern source pairs the subject quotation in this column with a similar sounding one: “Poetry is the art of giving different names to the same thing.” Many of these modern sources go even further, making the claim that Poincaré’s quote was made as a direct response to this aphorism on poetry; however, there is no evidence in support of this claim, since “The Future of Mathematics” contains no reference to poetry at all. The original connection between these two quotations appears to be the article “Three Great Synonyms: Relation, Transformation, Function” by Cassius Jackson Keyser, which was first published in the journal *Scripta Mathematica* in 1935. In the paper, Keyser states that he shared the Poincaré quotation with an unnamed poet, who quickly responded with the alternative quotation. So according to Keyser the quotation on poetry was in response to Poincaré, not the other way around.

*Mike Molinsky*

## Dublin Adventures

My lifelong desire to visit Ireland was finally fulfilled in July 2009. I had been teaching an undergraduate course in the history of mathematics for several years, so Dublin, our first destination, had a new significance and two essential goals. Most CSHPM members are familiar with William Rowan Hamilton. In July 2011, some of you participated in a “Memorial Walk” from Dunsink Observatory, where Hamilton worked, to Broom Bridge, where he carved his discovery of the formula for quaternion multiplication:  $i^2 = j^2 = k^2 = ijk = -1$  into the stone bridge. Most of us would excuse this graffiti! However, the bridge has been replaced and a plaque on the new one commemorates his discovery.

Dublin is world famous for Guinness beer, which is

appreciated even by many who are not so fond of mathematics. The brewery is now a museum called the Guinness Storehouse. William Sealy Gosset was an English chemist who worked at Guinness. He used statistics to improve the quality of the beer (and probably the revenue). He is known by those who teach introductory statistics for the development of the Student t-test.

How could I face another history of math or statistics class without a “pilgrimage” to the bridge and another one to the Guinness Storehouse? To my dismay, only one tour book had a single line about Hamilton. One of the free tourist maps, available in Dublin, did identify the site of Hamilton’s birthplace on Dominick Street Lower. On the map, Hamilton was called a “WORLD-FAMOUS MATHEMATICIAN.”

My trip to see the plaque was a different kind of adventure from the “Memorial Walk.” The bridge crosses the Royal Canal and was originally called Brougham Bridge. My first plan was to walk to the bridge, since the Royal Canal passes north of the city and our hotel was on the north side of the Liffey. (The Liffey River divides the city of Dublin.) A quick glance at some maps was the end of that idea. However, there was a commuter line from Connelly Station in Dublin that passed through Broombridge Station. Some of the trains even stopped there.

Although my husband begged off, one of our travel friends agreed to accompany me. Sue and I went to Connelly Station, bought our tickets (Broombridge and return), and got on the train. As we neared the second stop, we went to stand by the door. The train stopped, but the door didn’t open. One of the other doors did open. We rushed to it and stepped out onto the platform. Surprise! On either side of the tracks there was an asphalt platform with a small shed with a long bench. This was definitely not like taking the Long Island Railroad from New York City. We looked around and saw a few buildings some distance away on our side of the tracks and some on the other side. They looked like warehouses. A few cars went by and one man could be seen. However, there was a bridge and a canal.

We walked up to the road that ran across the bridge. All of the Irish people whom we met were very friendly, so we spoke with the man we had seen since he was about to cross the bridge. I explained that



Figure 6: Broombridge Station

I was a math professor and interested in the bridge because of its historical significance. Apparently, he was not interested in Hamilton and directed us to a bridge that was much older.



Figure 7: Royal Canal and Bridge.

In Dublin, all of the bridges across the Liffey are named. There is generally a plaque in the middle of the bridge with its name and brief information about its history or that of the person for whom it was named. We crossed Broom Bridge but saw no plaque. We each walked down to the canal on one side of the bridge but still had no luck. Sue had gone down on the left side and continued around to the canal side of the abutment. At last! There was the plaque, somewhat faded, with Hamilton's name, the formula for quaternion multiplication, and the date on which he finally discovered it.

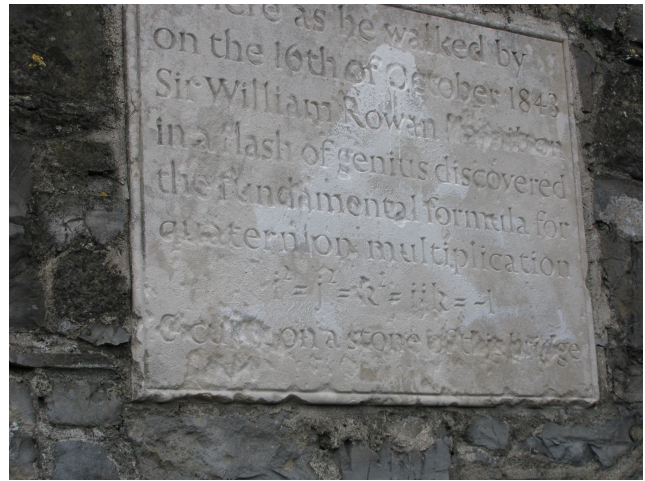


Figure 8: Quaternion Plaque.

After taking pictures, there really was nothing else to do there. We walked back up to the bridge and went down to the platform for the train that went back to Dublin. A young couple with a baby also came down. That reassured us that we were not the only ones around or the only ones who wanted to leave. It was also comforting to know that we were not going to have to wait several hours for the next train, especially because there was no sign of a pub nearby.

A train approached, but it didn't even slow down! We had a moment of panic until I remembered my copy of the timetable. That was an express train from Maynooth.

Finally, the train appeared and it stopped with a door right in front of us. However, it didn't open. Did Hamilton's ghost want us to stay longer? Fortunately, on the door, a button surrounded by green lights caught my eye. An immediate push on the button saved us. The door opened and we quickly got on the train. In a short time, we returned to Connelly Station and had lunch. The adventure was over.

The day before we went to Broombridge, all four of us had taken the "Hop on, Hop off" bus that included the Guinness Storehouse in Dublin. The museum gives some history of Guinness and the steps involved in brewing. The tour ends at the top of the building, where your ticket may be exchanged for a glass of beer. Most of the walls are glass, and the view of the city and surrounding area is spectacular.

The tour was interesting, and there was a plaque with Gosset's name and the name of the Student t-test.



Figure 9: Gosset Plaque.

Guinness did not permit employees to attach their own names to anything, so Gosset used “Student.” A time-line included his signature, and there was a picture of Gosset with other brewers.

I do not like beer so there was no reason to redeem my ticket. As my husband and friends got their beers, it seemed that I should at least take a taste in memory of Gosset. That will always represent a missed “photo op” for our friends. They found my expression quite entertaining! Guinness beef stew is highly recommended though.

The Storehouse also has a substantial Guinness Company Archive. The staff is extremely helpful and showed me a small portion of the material on Gosset. It will definitely be on my agenda for a longer visit when I return to Dublin. The Archive is open to Guinness employees, historians, and those who wish to research ancestors who worked for the brewery.

As an expected result of these adventures, I have been able to help students in the history of math classes see both Hamilton and Gosset as real people. For students in introductory statistics as well, Gosset becomes more than just a name in the book. As one of the “disciples” of Victor Katz and Fred Rickey, I feel very strongly about introducing history in every mathematics course.

As every mathematician knows, it is always a good idea to approach every new problem by trying to relate it to a problem that has been solved before. Our trip to Broombridge thus provided an unexpected benefit. On a recent trip to Montréal, the car door in

front of us on a commuter train did not open. I looked for a button, found it, and pushed. As I anticipated, the door opened. The study of mathematics does indeed have many unusual applications!

*Agnes Kalemaris*

## CSHPM Award Guidelines

The CSHPM Award is a prize to be presented for the best student paper published in the *Proceedings* of the CSHPM Annual Meeting. These guidelines were approved at the 2012 Annual General Meeting (see 11. b. in the minutes).

### 1. Eligibility.

- a. Only papers written or co-written exclusively by students are eligible for this prize.
- b. A student is defined as any individual currently enrolled at a university when the abstract is submitted. This includes undergraduate and graduate students in any program of study.
- c. A student wishing to be considered for the Award must submit a written version of the presentation (maximum 3,500 words, digital format) to the Program Chair for publication in the *Proceedings*.
- d. The Award shall be judged on the quality of the written version of the paper; however, the winning paper must have been delivered at the annual meeting.

### 2. Notification.

- a. The Program Committee shall alert presenters to the existence of this award when notifying presenters that their papers have been accepted.
- b. The Program Committee shall alert prospective presenters to the existence of this award by including a notice in the Call for Papers and on the CSHPM website. The Program Committee should endeavour to distribute this notice to all appropriate forums such as mailing lists and websites in the field.

### 3. Award Committee.

- a. The Program Chair shall serve as Chair of the ad hoc Award Committee and shall (prior to September 1) select between two and four other members of the Society who will also serve on the Award Committee.



- b. The Award Committee may (but need not) be co-extensive with the Program Committee.
- c. Students may not be members of the Award Committee.
- d. The Award Committee Chair shall distribute written submissions to other Committee members for adjudication.

#### 4. Award.

- a. The prize shall be a monetary award intended as a stipend for the purpose of presenting either the award winning paper or a different paper at another meeting. The amount of the stipend will be determined by the Executive Council.

#### 5. Criteria.

- a. Clarity of paper.
- b. Quality and originality of research.

## AGM of CSHPM/SCHPM

The Annual General Meeting of the Canadian Society for History and Philosophy of Mathematics took place at the University of Waterloo, Waterloo, Ontario, on May 28, 2012. The meeting was called to order at 12:31 pm by Jean-Pierre Marquis, President, with 26 members in attendance.

### Agenda for the General Meeting

1. Approval of agenda
2. Approval of minutes of 2011 AGM
3. Treasurer's report
4. Secretary's report
5. *Proceedings* Editor's report
6. *Bulletin* Editor's report
7. Webmaster's report
8. Archivist's report
9. 2013 meeting
10. Future meetings
11. Other business

1. The agenda for the general meeting was approved.
2. **Motion:** To approve the minutes of the 2011 Annual General Meeting as printed in the November 2011 *Bulletin*. Carried unanimously.

3. a) In the absence of the Treasurer, Dirk Schlimm, Jean-Pierre presented the 2011 financial statements. Overall, the finances are healthy. As directed by the 2011 AGM, \$4,000 was invested in a GIC. David Bellhouse commented that this transaction should be shown as a transfer rather than as an expense on the statements. b) David moved and Robert Bradley seconded that the report be approved. Passed unanimously.

4. a) On behalf of the Secretary, Patricia Allaire, Jean-Pierre thanked Mike Molinsky and Dirk Schlimm for their assistance with PayPal, conducting the election, communication, and other items that help her accomplish her duties. She also thanked Amy Ackerg-Hastings for taking minutes in her absence. b) Jean-Pierre reported for the Secretary and the Nominating Committee (Gregory Lavers, Robert Bradley, and Duncan Melville) that 79 ballots (78 electronic, 1 paper) were cast in the 2012 Council election. Elected were:

President: Glen Van Brummelen (78)

Vice-President: Elaine Landry (77)

Secretary: Patricia Allaire (79)

Treasurer: Dirk Schlimm (76)

Councilor: Francine Abeles (74)

Councilor: Gregory Lavers (74)

Councilor: Adrian Rice (77)

Councilor: Sylvia Svitak (73)

c) Jean-Pierre also shared announcements from the Secretary: Speakers are reminded that they must be members of the Society to publish in the *Proceedings*. Travel reimbursement forms are available on the website. d) Comparative membership data for 2011 and 2012 were posted. (Please refer to the CSHPM Executive Council Minutes in this issue of the *Bulletin* for this data and the Secretary's comments.) Members expressed concerns about the drop in US members and new members. Journal subscriptions are also down, which may be due to US members having online access through their institutions. Jean-Pierre noted that we do need to pay attention to patterns in the membership numbers. e) On behalf of the Society, Jean-Pierre thanked Dirk and Pat for their wonderful work. He is especially appreciative of Pat's institutional memory.

5. Jean-Pierre reported that Tom Archibald, the *Proceedings* editor, has edited all of the papers from 2011

and manually converted them to LaTeX formatting. Tom expects to mail the *Proceedings* this week. He is willing to continue for 2012 but probably not after that. Jonathan Seldin asked about the style file Tom uses, so that members can save him some labor; Tom uses the AMS style.

6. a) *Bulletin* Content Editor, Amy Ackerberg-Hastings, noted that all went well this year and that all of the editors are continuing in their positions. As always, members' submissions are needed to fill each issue. Deadlines are October 1 and April 1. b) Maria Zack reported that she is mailing 70 printed copies of the *Bulletin*; she and Amy will follow up with Pat on the discrepancy with the number in the comparative membership data. c) Tom Drucker expressed appreciation for the scholarship in the obituary of Michael Dummett by Mathieu Marion. Jean-Pierre expressed thanks to Amy, Maria, and Eisso Atzema for their efforts, especially the role they play in helping to preserve institutional memory.

7. a) The Webmaster, Mike Molinsky, reported that the redesign of the website is complete, and problems for Firefox users appear to be fixed. Rob Bradley noted that there are issues with the website for iPad users; Mike will check into it. b) Pat conducted an informal survey and got a variety of answers as to why members chose not to utilize the online membership renewal option. There were technical problems with the form for about 20 members. In most cases, this was because their browsers (Google Chrome, Mac Safari, etc.) automatically open PDF files instead of sending the files to Adobe Acrobat. Pat has some recordkeeping issues for Mike to fix on the form. c) Rob Bradley asked if there was a mechanism to prevent double voting in the Council election. Mike said there is not, but he noted paper ballots could also be duplicated. A secure voting solution, including SurveyMonkey if all members voted, would cost money. d) In the May 2012 *Bulletin*, Mike noted that the CSHPM email discussion list is underutilized. At present, the list is only used for announcements, but only one-third of members subscribe to the list, meaning that most members do not see the announcements. Mike asked for feedback on whether the list should continue or whether a list of all members should be created so that Council may distribute announcements. Maria asked whether members opt to use the HOMSIGMAA list for discussions. Mike

said that seems to be the case, but he noted that Amy Shell-Gellasch reported that she sometimes asks questions on that list in order to get a discussion going. Joel Silverberg and Rob Bradley recommended that a list be created for announcements and that the discussion list be retained for the time being. Joel moved and David Bellhouse seconded such a motion, which was unanimously approved. Rob also requested that the default status for the discussion list be reverted so that replies automatically go to the entire list (and not to the sender only). e) Jean-Pierre thanked Mike for his service to the Society.

8. As Archivist, Mike Molinsky reported that he started to inventory the archives two years ago. That work is taking a while because he is digitizing items as he inventories them. This provides a back-up of the archives and also allows him to send copies of *Proceedings* articles to authors who request them. George Styan asked whether the *Proceedings* is widely available electronically. Copyright issues remain for existing volumes, although the table of contents for each *Proceedings* can be found on the website and requests for copies can be sent to Mike and to the author. Jean-Pierre suggested that the Council could revisit the issue of making the *Proceedings* electronic in the future, perhaps by asking authors to sign a Creative Commons license when they submit their articles. Greg Lavers noted that Council ought to check whether such a license would prevent authors from publishing their papers elsewhere, and Maria noted that we do not referee papers or collect them in advance of a meeting.

9. a) In 2013, we will meet with HOMSIGMAA and POMSIGMAA in Hartford, CT, during the MAA MathFest on August 1–4. The theme will be interactions between history and philosophy of mathematics, and Jeremy Gray will be May Speaker. The organizing committee will serve as session organizers, with Glen Van Brummelen and Tom Drucker organizing the special session and Rob Bradley and Maria Zack organizing the general session. b) David Bellhouse asked about flight options into Hartford; there are direct flights from Toronto and Montreal. Tom expressed a hope that the joint meeting will stimulate membership in the Society. Members expressed thanks to the organizers.

The meeting was interrupted at 1:23 pm so that Lorna

Hulskamp and Doug Peers from the Canadian Federation for the Humanities and Social Sciences could address the Society. a) They noted that although there was concern about Tri-Council funding, SSHRC funding remained largely the same, with cuts only to operating funds. In addition, SSHRC will share a \$2.5 million grant with other organizations. b) A vice-president of teaching will be established to improve public outreach. c) After 2017, FedCan will invite open bids for hosting Congress. The current attendance, 7,000 delegates, is the break-even point for universities, so convention centers will also be able to participate in the process. d) Jean-Pierre expressed concerns with information that has disappeared from the new FedCan website. Lorna responded that the site is not yet finished and all information will reappear. In the meantime, she announced that the 2015 Congress will be in Ottawa and Memorial University plans to bid on the 2016 Congress. e) David Bellhouse expressed concern that discovery grants are being eroded in favor of partnerships with business. Doug responded that the \$7 million cut in the operating budget did go to these partnerships, but he also noted that standard research grants have been replaced by insight and other grants. That said, he has heard the same concerns about Natural Sciences and Engineering Research Council of Canada grants that David has heard, and FedCan will monitor the situation.

10. a) The meeting resumed with the announcement that the 2014 meeting will be at Brock University with Congress. b) The question of the pattern of future meetings was discussed. In 2010, the consensus was that the History session of the winter meeting of CMS is more important to us than joint meetings during the summer. We need to talk to BSHM about their expectations for future joint meetings, since it is financially difficult for many of their members to attend meetings in Canada.

11. a) In other business, Mike reported on Dirk's behalf about issues that have arisen with using PayPal for membership renewals: The minor issue is that a 3% fee is charged for each transaction. The major issue is that PayPal will only transmit a nation's currency to a bank in that country. So, PayPal will not send US funds to our bank in Canada. One solution is to pay a currency conversion fee to PayPal and then pay a second currency conversion fee to our

bank. Another solution is to get a US bank; the one PayPal recommended is not currently communicating with PayPal. Thus, the US funds paid for 2012 memberships are still sitting in PayPal. David Bellhouse suggested that the Society could start collecting all membership fees in Canadian funds. Then, only the funds needed to pay US bills would have to be converted, and conversion fees would only be paid once. Members unanimously agreed to a proposal that Dirk be directed to research this option. If it is workable, he is authorized to implement it immediately. b) Jean-Pierre read his proposal to establish a student prize, which was distributed by email to the discussion list. He noted that Patricia Allaire recommended adding "and editor of the *Proceedings*" to section 1.d. and Jim Tattersall raised questions about the composition of the committee. George Styan asked whether a student would be defined as a student at the time of the meeting. A discussion followed, resulting in a proposal that section 1.b. be reworded to "enrolled at a university when the abstract is submitted." Rob Bradley called the question, and the amended proposal was approved. The text as approved appears separately in this issue. c) Jean-Pierre expressed thanks to David DeVidi, the local organizer, and to Sylvia Svitak and Maria Zack, the program organizers. d) Tom Drucker expressed thanks to Jean-Pierre as outgoing president.

The meeting was adjourned at 2:00 pm.

*Amy Ackerberg-Hastings, for the Secretary*

## Executive Council Meeting CSHPM/-SCHPM

The meeting of the Executive Council of CSHPM/-SCHPM took place at the University of Waterloo, Waterloo, Ontario, on May 27, 2012. The following members were present: Francine Abeles, Amy Ackerberg-Hastings, Greg Lavers, Jean-Pierre Marquis, Duncan Melville, Michael Molinsky, Sylvia Svitak, Glen Van Brummelen, and Maria Zack. Jean-Pierre Marquis, President, called the meeting to order at 12:17 pm.

**Treasurer's Report:** In the absence of Dirk Schlimm, Jean-Pierre reviewed the report distributed to the Council and published in the May 2012 *Bulletin*. He noted that timing issues resulted in the Society paying Federation dues twice last year, but the finances are in

good shape overall. Glen pointed out that last year's transfer of funds to the new GIC fund obscures the fact that the Society actually had significant income last year. Maria noted that the costs for this year's May speaker will be low because we are sharing them with CSHPS and because the Federation also provided US\$1,000 for the speaker. However, we are likely to lose money on catering for this meeting.

Jean-Pierre reminded the Council that the Society's overall financial position can have significant fluctuation from year to year. Duncan observed that the balance of our assets would cover our expenses for two years, so the endowment is not excessive.

**Secretary's Report:** Patricia Allaire sent thanks to Amy for taking minutes and to Mike and Dirk for helping with the Secretary's duties. Sylvia brought membership forms and extra copies of the *Bulletin*. Mike contacted Dirk for the travel reimbursement form. Speakers were reminded that they must be members of the Society to publish in the *Proceedings*.

Mike brought election results. There were 78 electronic ballots and 1 paper ballot received; this total is almost twice the usual number of voters. Each member on the slate was elected by at least 70 votes.

Jean-Pierre brought comparative membership data for 2011 and 2012:

	2011	2012
<b>Total Members</b>	175	141
<b>Members By Pay Method</b>		
\$Can	41	42
\$US	104	96
BSHM	22	0
Complimentary	4	1
CSHPS	4	4
<b>Members By Status</b>		
Active	119	89
Retiree	39	40
Student	9	9
Developing nation	4	3
Student Associate	4	0
<b>New Members</b>	17	4
<b>Reciprocal Memberships</b>		
To BSHM	49	48
To CSHPS	21	23

<b>Journal Subscriptions</b>		
Historia	76	69
Philosophia	40	36
<b>Proceedings</b>	74	76
Paid	42	42
Complimentary	31	33
Federation	1	1
<b>Bulletin</b>		
Electronic	130	104
Paper	45	37
<b>Donations</b>		
No. Donors	23	25
Amount	\$652.00	\$658.00

"Payment method" provides a rough approximation of nationality, although members from outside the US and Canada usually pay in \$US. Donations are sometimes provided in the form of retirees preferring to pay for their complimentary *Proceedings*. Much of the apparent decline in membership is due to a paperwork issue related to the BSHM electing a new Secretary. Glen and Robin Wilson have worked out that issue. The Council also discussed possible reasons for the decline in US membership, such as the ability to get online access to the journals through one's own institution, and brainstormed how to attract more student members. Glen suggested a program session set aside for students and additional verbal encouragement to professors to suggest membership to their students.

**Proceedings Editor's Report:** Jean-Pierre agreed to contact Tom Archibald for an update on the status of the preparation and mailing of the 2011 *Proceedings*.

**Bulletin Editor's Report:** Amy Ackerberg-Hastings reported that all is going smoothly and reminded the Council that contributions and feedback are always welcome. She expressed thanks to the co-editors, Eisso Atzema and Maria Zack.

**Webmaster's Report:** Mike Molinsky reviewed the status of the online payment option introduced for 2012. About half of members utilized the option. Pat informally polled those who did not and found that some members chose not to use the option, while about 20 members had technical difficulties with the Submit button. Mike discovered that, in almost all cases, the problem was that the members' web browsers automatically opened the renewal form inside their browsers instead of in Adobe Acrobat. Some

of the technical solutions for this problem are to develop a web page version of the form or to wait and see if the problem recurs next year. Pat Allaire also provided suggestions for improving the clarity of the form to assist with her recordkeeping.

Mike also reported that there are issues with conducting electronic payments via PayPal. There is a 3% charge for the service. Additionally, PayPal will only send Canadian funds to our bank, since it is located in Canada. To access our US funds, the Society would have to pay a fee for the transfer and then pay a second fee to our bank to put the funds back into US dollars. Dirk may open a second account in a US bank. Fran knows of a bank in Vermont or New Hampshire that does not distinguish between US and Canadian funds. Mike noted that, although our bank is TD, it is different from the TD bank in the US. Journal publishers will not accept payments from PayPal. There is no good alternative to PayPal for receipt of electronic payments. Dirk and Mike will continue to research these issues.

In September 2011, Mike redesigned the website to remove most of the frames and thus resolve a problem Firefox users were experiencing with not seeing updates to the site. Sylvia requested that new announcements be made more prominent or colorful; Mike will see what can be done.

**Archivist's Report:** Mike Molinsky reported that he is still inventorying the archives. He has been scanning some documents; particularly, he has been digitizing the *Proceedings* because authors have been requesting copies of their articles.

**2013 Meeting:** We will meet with HOMSIGMAA and POMSIGMAA during the MAA MathFest, August 1-4, at the convention center in Hartford, CT. By consensus, the Council agreed it was too expensive to cater the AGM next year. (FYI, HSSFC Congress meets in Victoria in 2013.)

Glen assembled a committee of Maria (representing CSHPM/SCHPM), Robert Bradley (representing HOMSIGMAA), and Thomas Drucker (representing POMSIGMAA) to organize this joint meeting. [*Editor's Note:* Bonnie Gold later joined the committee to also represent POMSIGMAA and promote the meeting to POMSIGMAA.] The committee volunteered to serve as session organizers as follows: Tom and Glen

will organize the special session, on interactions between history and philosophy of mathematics, and Rob and Maria [and Bonnie] will organize the general session. Jeremy Gray will be the May Speaker.

**Other Business:** Congress meets at Brock University in 2014. Council will recommend that site to the AGM and noted that 2014 is the 400th anniversary of Napier's logarithms.

The report of the Nominating Committee, which appeared in the May 2012 *Bulletin*, was approved.

Jean-Pierre's proposal for a student prize, which was circulated to members via the email discussion list, will be discussed at the AGM. The Council briefly discussed suggestions for modification received from Pat Allaire and from Jim Tattersall. Jean-Pierre pointed out that having a permanent member of the prize committee, such as the President or Past-President, would be useful for institutional memory. Perhaps the *Proceedings* Editor also ought to be a permanent member of the committee.

The meeting was adjourned at 1:13 pm.

*Amy Ackerberg-Hastings, for the Secretary*

## ARITHMOS & More

ARITHMOS is the acronym for a seminar entitled Arithmos: Readings In The History of Mathematics from Original Sources. This reading group was originally organized by Rob Bradley (Adelphi University) and Ed Sandifer (now Professor Emeritus at Southern Connecticut State University) and first met in 2001. The meetings, three or four per year, are usually held at SCSU in Danbury, CT, on a Saturday afternoon and Sunday morning. You can consult the web site <http://www.arithmos.org/> to see what topics have been discussed in the past.

We read aloud an English translation of a previously selected mathematical text, usually with some people following along in the original language, other translations, and other editions. We move around the table, each person reading a paragraph or so. Often the reader is interrupted with questions and comments and there is more discussion after they finish. This may seem ponderous and tedious, but it is not, for the discussion is always enlightening. We are fortified

with tea and chocolate, and this approach works well for us. Almost always at the end, everyone feels that they have gained a rich appreciation of the text.

As we approached our fortieth meeting, we discussed the possibility of doing something different. After considerable discussion we decided to visit the Beineke Library at Yale to look at some cyphering books and other treasures in their collection, but the timing did not work out (so now it is on our agenda for a future summer meeting). We also wanted to visit the Yale Babylonian Collection, and one of our members, Ross Gingrich (Southern Connecticut State University in New Haven), arranged for our visit. Associate Curator Dr. Ulla Kasten gave a lovely general description of the largest collection of tablets in the Americas. She showed us a tablet with an envelope, an empty bulla, and several cylinder seals. These were very costly for they are made of stone (not clay) and were passed from generation to generation.

Dr. Kasten discussed some of the objects in the cases around the small classroom in the library where we met. There was the Yale Gilgamesh Tablet (Gilg. Y vi 262), one of the earliest works of literature, an epic on the creation of the world (NBC 11595). Sadly, it was damaged by an excavator's pickaxe. We also saw the first work whose author is identified by name (YBC 4671), which dates from 2260 BC. The author was the poet Enheduanna, a woman.

We were amazed by the small writing on the tablets. We learned that the clay tablets shrink by about 5% when dried and another 3% when fired, but even so, the writing was tiny. It took effort to make out the numerals on the tablets. We were allowed to take photographs for our personal use, but it was difficult to get a good raking shot to make the writing legible.

Dr. Kasten let us play with clay and stylus to make our own sample tablets and practice the difference between regular vertical wedges and the Winkelhaken, the symbol whose value is 10. We all had trouble making a Winkelhaken.

For this meeting we were honored to be joined by Duncan Melville of St. Lawrence University, who led the discussion of the 25 mathematical tablets that we saw. As a graduate student at Yale he learned a great deal about mathematics in Mesopotamia, and he continues to do research in the area. In fact, he has a very

interesting web page on Mesopotamian Mathematics.

We were surprised that we were permitted to handle the tablets without wearing gloves. For me, it was most exciting to hold YBC 7289. Because of its size it is called a "hand tablet" and it fit very nicely in my hand. This is the famous tablet that contains the number 1,24,51,10, which is a sexagesimal approximation for the square root of 2. What I did not know before is that this number also appears on an Old Babylonian coefficient list. This means that the schoolboy who created the tablet most likely looked up the value, rather than computing it himself.

We saw multiplication tables, reciprocal tables, geometric algebra tables and a tablet dealing with the area of a circle. Most interesting was one dealing with the survey of a field (YBC 3900, 2045 BCE). To find the area, the field was broken up into rectangles, trapezoids and right triangles, and the areas of these regions is then added. This is the same technique that George Washington used in 1750 as a professional surveyor.

Towards the end of the meeting a historical and linguistic overview was provided by Elizabeth (Lee) Payne, the Conservator of the Babylonian Collection.

The next day we read portions from Eleanor Robson's treatise on Mesopotamian Mathematics in Victor Katz's *The Mathematics of Egypt, Mesopotamia, China, India, and Islam: A Sourcebook* that contained the texts of the tablets we saw. What makes this seminar work so well is that people have read the material in advance and so know what their questions are. The discussion was spirited, enlightening, and fun.

The only other reading group of this nature that we are aware of is the ORESME (Ohio River Early Sources in Mathematical Exposition) group, which has been meeting since 1998 in Southern Ohio and Northern Kentucky. The organizers are Daniel J. Curtin (Northern Kentucky University) and Daniel E. Otero (Xavier University). It is amusing that both groups first made up their acronyms and then found words to fit them. Reports on earlier meetings can be found on the ORESME web site.<sup>3</sup>

Their most recent meeting was held at Xavier University in Cincinnati, Ohio, on September 21–22, 2012. The topic for discussion was Pierre Simon Laplace's

<sup>3</sup>See <http://www.nku.edu/~curtin/oresme.html>

*Théorie Analytique des Probabilités*, which was published just two hundred years ago. We discussed Part 2, Chapter 4, section 18, which contains a proof of the Central Limit Theorem. This proved to be a very tough read but fortunately Richard J. Pulskamp of Xavier University has just published a discussion of the work, “The Legacy of the *Théorie Analytique des Probabilités*.” He also prepared the translation that we used. Although difficult, this was a rewarding text to read, for we could follow Laplace working through ever more general cases.

I have attended the ORESME seminar several times and regularly attend ARITHMOS. The ARITHMOS group meets for lunch at a Mexican restaurant on Saturday and then reads, discusses, and argues about the mathematics from 2:00 to 6:00, at which time we go to dinner. We reconvene on Sunday at 9:00 and work till about 1:00 and then go to lunch. This provides time for lots of discussion of the topic of the meeting, chat about many other topics in the history of mathematics, and social interaction. ORESME meets on Friday evening for dinner and then works from 8:00 to 10:00 PM and again Saturday morning from 10:00 to noon.

At the most recent meetings there were eight historians in attendance. This is a large enough group to deal with all of the mathematical and historical questions that arise, but small enough that there can be close interaction. We find this to be an ideal number.

I would encourage you to try to form groups like these whenever you can gather a cadre of individuals that live within, say, an hour’s drive. After the word got around about how interesting these sessions were, some people were willing to drive three or four hours and stay overnight just to participate. Like them, you will find it to be a rewarding experience.

#### A few references:

- Dave Richeson explains how to typeset Babylonian numerals in TeX: <http://divisbyzero.com/>
- Pulskamp, Richard, “The Legacy of the *Théorie Analytique des Probabilités*,” *Boletim ISBrA (The official bulletin of the Brazilian section of the International Society for Bayesian Analysis)*, vol. 5, no. 1, July 2012, pp. 9–19.
- Stephens, Ferris J., “A surveyor’s map of a field,” *Journal of Cuneiform Studies*, vol. 7, no. 1 (1953),

pp. 1–4.

- The Cuneiform Digital Library Initiative has images of many tablets: <http://www.cdli.ucla.edu/>

For an on-line version of this note, with many links, see <http://fredrickey.info/ARITHMOS-42.html>.

V. Frederick Rickey

## HPM Americas Section in Berkeley

The Americas Section of the International Study Group on the Relations Between History and Pedagogy of Mathematics met at UC Berkeley, October 26–28, 2012. Graduate student Emily Redman welcomed us to the Center for Science, Technology, Medicine, and Society; organized four meals; hosted an exhibit of rare books from the Bancroft Library; and led an expedition to the *Math Midway*, a traveling exhibit from the new Museum of Mathematics in New York City at the Lawrence Hall of Science in Berkeley.

Twenty-nine attendees also heard a plenary lecture by Alan Schoenfeld, dealing with his contributions to and concerns about American mathematics education, and thirteen presentations on the history of mathematics, the history of mathematics teaching, historical models for teaching mathematics, and the use of history in teaching mathematics. At ICME-12 (discussed elsewhere in this issue), Alan was recognized as the 2011 recipient of the Klein Award and delivered “How We Think: A Theory of Human Decision-Making, with a Focus on Teaching” to a packed auditorium.

Marty Flashman examined Newton’s approach for estimating  $\ln(2)$ , and Barney Hughes presented excerpts from *Resource Book in Medieval European Mathematics*, which is forthcoming from Princeton, edited by Victor Katz, and also drawing on Len Berggren’s expertise. Emily traced the history of an anthropology curriculum project funded by the NSF in order to point out the project’s implications for the NSF’s approach to education in all disciplines, including mathematics. In joint work with Nerida Ellerton, Ken Clements explored the teaching of duodecimals in early American textbooks and cyphering books. Fred Rickey shared his efforts with Theodore J. Crackel to

reconstruct George Washington's education in surveying.

Pat Baggett and Andrzej Ehrenfeucht suggested that John Leslie's 1815 *Philosophy of Arithmetic* provides an alternative process for teaching number concepts, while Farrokh Saba told about his experiences with teaching a course on notable women in STEM at a women's college. David Pengelley showed how he uses seemingly silly questions about fractions to guide students into sophisticated mathematical concepts. He also presented a number theory course he teaches by guided discovery through Sophie Germain's manuscripts, and New Mexico State graduate student Kristina Leifeste reported on her experience in the course as a student.

John Martin explained how he uses the logarithmic spiral, the story of the Bernoullis, and GeoGebra in his calculus teaching, and Dave Ruch reported on a discrete math student project he developed on Abraham de Moivre's method for solving a general linear difference equation with constant coefficients. (Anticipating audience questions, Dave mentioned that he found CSHPM member David Bellhouse's work on de Moivre extremely helpful with this project.) Stuart Moskowitz engaged the audience in solving vanishing area puzzles to demonstrate teaching multiple strategies for problem solving. Amy Ackerberg-Hastings provided resources for teaching mathematics with slide rules, in blatant promotion for [collections.si.edu](http://collections.si.edu).

Section officers David L. Roberts, Kathy Clark, and Amy A.-H. assisted with logistics and led a business meeting. During the meeting, Emily and Kristina volunteered to transition into the Treasurer and new Webmaster positions on the executive committee. The conference was wonderful, even though those of us from the East Coast had convoluted trips home, courtesy of Hurricane Sandy. To propose a meeting site for the Americas Section on the East Coast, West Coast, or any point in between, please contact Kathy at [drkclark@gmail.com](mailto:drkclark@gmail.com). Contact Kathy as well to be added to an email list that distributes information about future meetings.

*Amy Ackerberg-Hastings*

## 2013 Call for Papers

The annual meeting of the CSHPM/SCHPM will take place in Hartford, Connecticut, August 1–3, 2013. The unusual location is the result of the meeting's being held in conjunction with MathFest, the summer meeting of the Mathematical Association of America. In particular, the Society will be meeting with the History of Mathematics Special Interest Group of the MAA (HOMSIGMAA) and the Philosophy of Mathematics Special Interest Group of the MAA (POMSIGMAA). Our hope is that the attendance will reflect the union of the memberships of these organizations rather than the intersection.

The theme of the meeting will be the interplay between the history and the philosophy of mathematics. The special session will be devoted to papers that combine those topics in a way that reflects their interaction. The general session will, as usual, be open to those addressing any aspect of history or philosophy of mathematics. Our hope is that keeping the number of parallel sessions to a minimum will encourage attendance at talks on a broad range of subjects.

Abstracts (250 words or less) should be submitted by the deadline of 15 February 2013. Those wishing to speak in the general session should submit their abstracts to Rob Bradley, [bradley@adelphi.edu](mailto:bradley@adelphi.edu). Those aiming at the special session should submit their abstracts to Glen van Brummelen, [gvb@questu.ca](mailto:gvb@questu.ca). Once the abstracts are accepted by the organizing committee (which includes, in addition to Rob and Glen, Maria Zack, Bonnie Gold, and Tom Drucker), instructions will be given for how to submit them to the Mathematical Association of America. We are taking advantage of their electronic submission system for this meeting. Graduate Students: Please see the announcement of the CSHPM Award published elsewhere in this issue.

## Crossroads of Cultures Workshop

Historians over the past couple of decades have begun to recognize the value in studying works written for practical purposes. Now we are studying books on mensuration written for surveyors, arithmetic textbooks, and the like, where previously these were not





Figure 10: Bernard Vitrac and Jean Christianidis.

regarded as having much interest.

One characteristic of practical books is that they frequently contain collections of worked-out problems. Interpreting such collections poses special problems for the historian, since they really have no specific author. Problems, and indeed entire groups of problems, were copied from one author to another, with additions, changes, and deletions. The traditional techniques of analyzing texts might not be appropriate.

An academic workshop in Paris, 13–15 June 2012, dealt with the analysis of these problems. The workshop was titled “Les séries de problèmes comme ‘carrefours de cultures’.” I found the “crossroads of cultures” part particularly interesting, because as knowledge is passed from one culture to another, both orally and in the translation of texts, the worked-out problems are passed along too. Besides myself, other historians of mathematics present included: Alain Bernard, Jean Christianidis, Giovanna Cifoletti, Marc Moyon, and Bernard Vitrac. Additional workshop participants focus their research on other aspects of premodern scientific writing.

The theme for the first day was “Le rôle des séries de problèmes dans la constitution de champs scientifiques.” Bernard, Cifoletti, and Stéphane Lamassé introduced the program. Jeffrey Oaks (Indianapo-

lis) presented “Early Arabic algebra: A practical technique from an oral tradition or a science invented by al-Khwarizmi?” Moyon (Limoges, FRED-EA 6311) provided commentary. Cifoletti (EHESS, Centre Koyré) then spoke on “Mathematics for Jurists in the 16th century,” with commentary from Iolanda Ventura (Orléans, IRHT). The other two days consisted of discussions.

*Jeffrey Oaks*

## ICME-12

Every four years, mathematics educators from around the world come together to exchange ideas. Fittingly, the 12th of these meetings was held in 2012 (July 8–15), at the COEX conference center in Seoul, South Korea. The International Congress on Mathematical Education consists of plenary and regular lectures, paper sessions (Topic Study Groups), presentations and group activities (Discussion Groups), presentations on mathematics education in various nations, poster sessions, panels on certain issues in mathematics education, and a vendor exhibition.

I served on the organizing team for the Topic Study Group (TSG) on the history of the teaching and learning of mathematics. Even though we only had six hours of time to fill with talks, we experienced almost every possible hassle that comes up in holding a conference, all exacerbated by language barriers. Fortunately, all of the headaches faded away once the meeting actually started, and we enjoyed eleven high-quality and interesting talks. For instance, one of our co-chairs, Kristín Bjarnadóttir, spoke on Iceland’s encounter with the New Math. Alexei Volkov proposed a scheme for categorizing teaching texts used in ancient and medieval China and Vietnam, and Senthil Babu suggested there were three phases in mathematics education institutions in nineteenth-century colonial India. All of the papers may be read by following the TSG links on [www.icme12.org](http://www.icme12.org).

Since I teach history, there were often events on the program that did not seem directly relevant to my work and so I allowed myself ample time to explore Seoul. Additionally, ICME has a tradition of closing down for a day for group sightseeing outings. I saw landmarks from the oldest surviving castle in Seoul to

the War Memorial of Korea and 1988's Olympic Park, all of which will inform my perspective the next time I teach world history. Perhaps more importantly, each resident I met acted as a friendly and gracious host.

I did also learn something in each of the sessions I attended. For instance, Don Hee Lee, South Korea's former Minister of Education, Science, and Technology, explored the concept of mathematical literacy, while ICMI's Bernard Hodgson traced the history of relations between mathematicians and mathematics educators. China's national presentation revealed that their teachers also worry about why their students do not like math. The Klein Project is a terrific source for teaching vignettes, [blog.kleinproject.org](http://blog.kleinproject.org). The discussion group on "uses of history of mathematics in school" was filled with teachers and professors who are passionate about engaging children through historical activities and sources.

ICME-13 will be held in Hamburg, Germany, July 24–31, 2016. Information is already available at [icme13.org](http://icme13.org).

*Amy Ackerberg-Hastings*

## PHILOPOLIS 2012

PHILOPOLIS is a philosophy extravaganza that I had previously encountered in Montreal. Accordingly, when David Brooke Struck issued an invitation to participate in another PHILOPOLIS (this time in Guelph, Ontario) in March 2012, I had the chutzpah to take up the offer.

Even though, thanks to my friends and colleagues in CSHPM, I'm on my way to becoming an accomplished HISTORIAN of mathematics, I'd never tried to prepare a philosophy paper. Luckily, I had heard many excellent ones at our annual conferences and at the semi-monthly Colloquia of the Institute at U. of T.

My proposed topic wasn't too adventurous: "High School Philosophy of Mathematics." It was favourably received in October 2011. Unfortunately, I was in the travails of real estate, selling one old house then buying another in downtown Toronto. It took until mid-January to submit my abstract.

Brooke accepted it and suggested it would be best if I could organise a panel discussion. I found two

colleagues from the high school mathematics department where I teach: Howard Kwan (who also teaches Philosophy) and Mario Portoraro (also Computer Science). The three of us had a few lunch hour meetings at our local cafe in preparation. There, we found the interconnections between our strengths that would lead to a balanced panel.

In the event, Howard caught a cold and couldn't make it on that wintry Saturday. Mario and I were assigned a small seminar room in Macdonald Stewart Hall, in the back of the Guelph public art gallery of the same name. It was a small space, but it was packed, mostly with philosophy undergrads from Guelph. I gave the general introduction and then talked about general issues, such as how high school students might understand the nature of number or of proof. Mario focused on logic in computing, illustrating it through the computer screen. There was extensive discussion, though mostly on Mario's issues in logic. My more general issues didn't seem to even register as possible questions for our youthful audience.

I was there for the whole day, taking in a variety of presentations looking at the philosophical aspects of Albert Einstein, food, nature films, politics out of a much wider menu. This was the first annual celebration of philosophy through PHILOPOLIS in Guelph or even the Greater Toronto Area. Why not join us in March 2013?

*David Orenstein*

## New Members

*Congratulations to the following new members who have joined the Society since our last Bulletin. We look forward to your contributions.*

B. D. Gramopadhye  
Porto  
Portugal

Ivica Martinovic  
Institut za filosofiju  
Zagreb  
Croatia

Dale McIntyre

Mercer, PA  
USA

David W. Milliern  
Bloomington, IN  
USA

Daniele Molinini  
Paris  
France

Cory Mulvihill  
Cully, Vaud  
Switzerland

Allan Olley  
Oakville, ON  
Canada

Jean Claude Simard  
Saint Anaclet, QC  
Canada

Diana White  
University of Colorado  
Denver, CO  
USA

*Additionally, we welcome the following winners of the  
2012 HOMSIGMAA Student Writing Contest.*

Jesse Hamer  
Lee's Summit, MO  
USA

Kevin Winger  
Columbus, OH  
USA

## From the Editor

November issues are typically packed with Society business, but you will also find ample reading material in this edition, documenting the numerous and

varied activities of CSHPM members. We may have set records for illustrations and for book reviews. (At least one of the latter had to be turned over to one of the younger pairs of eyes among our members, due to what we hope is a temporary trend toward microscopic font sizes in academic publishing.) We also welcome Glen Van Brummelen back to the President's chair; his previous term was 2000–2002. His 2012 report has a “good news-bad news” structure, but alas, at press time there was no punch line to ease the disappointment of the termination of the travel subsidies we and other societies receive from SSHRC. These have been a much-appreciated benefit for members since at least my first AGM in 1995.

On a much happier note, information about our upcoming joint meeting with HOMSIGMAA and POMSIGMAA is available in Glen's message and throughout this issue. For more “good news-bad news,” the number and quality of conferences in our discipline is growing faster than our time and financial support, whether the latter be institutional or personal. MathFest 2013 promises to be a truly exceptional event, well worth making a professional development priority. I hope to see as many of you as possible in Hartford next August.

The next submission deadline is 1 April 2013. As always, the *Bulletin* seeks news items of interest to historians and philosophers of mathematics, reports on conferences attended, and personal and professional announcements. We also welcome suggestions for memorials, book and web reviews, and informative or thought-provoking column-style articles. Plain text and LaTeX files are easiest for the editors to deal with, but we can also convert Word documents. Submissions may be sent to *aackerbe@verizon.net*.

The *Bulletin* reaches your hands or computer screen due to the continued efforts of Eisso Atzema, Layout Editor; Maria Zack, Production Editor; Pat Allaire, Secretary; and Mike Molinsky, Webmaster. I am thankful also for our officers, Councillors, and the volunteers who keep the Society's other functions operating smoothly. In particular, the collegiality and institutional knowledge of our Secretary was much missed in Waterloo.

*Amy Ackerberg-Hastings*

## About the Bulletin

The *Bulletin* is published each May and November by a team of 3 volunteers: Content Editor Amy Ackerberg-Hastings (aackerbe@verizon.net), Layout Editor Eisso Atzema (atzema@math.umaine.edu), and Production Editor Maria Zack (Maria-Zack@pointloma.edu). Material without a byline or other attribution has been written by the editors. Les pages sont chaleureusement ouvertes aux textes soumis en français. Comments and suggestions are welcome and can be directed to any of the editors; submissions should be sent to Amy Ackerberg-Hastings at the above email address, or by postal mail to 5908 Halsey Road, Rockville, MD 20851, USA.



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