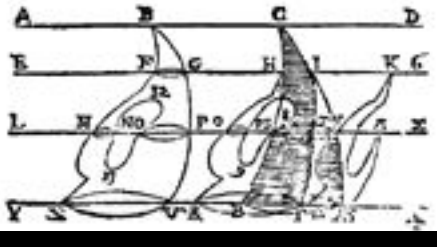
BULLETIN

CSHPM SCHPM



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WHAT'S INSIDE

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 de philosophie des mathématiques (CSHPM/SCHPM) promotes research and teaching in the history and philosophy of mathematics. Officers of the Society are:

President: **Robert Bradley**, Adelphi University, Garden City, NY 11530, USA, bradley@adelphi.edu
Vice-President: **Alexander Jones**, University of Toronto, Toronto, ON M5S 2E8, CA, alexander.jones@utoronto.ca
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The Society's Web Page (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 **Antonella Cupillari**, School of Science, Penn State Erie, The Behrend College, Erie, PA 16563, USA, axc5@iusb.edu

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

From the President

As I write my last set of remarks as president of the CSHPM, the leaders of North America's three nations are gathered for a summit in Cancun, Mexico. The American media is focused on the topic du jour: immigration, legal and otherwise, from Mexico to the US. If this weren't the first meeting between the US president and a new Canadian prime minister, I wonder if Canada would have had any mention at all in the network news summaries.

As a Canadian expatriate, I'm naturally most interested in the Canada-US edge of the political graph of North America. The US media's relative myopia on matters Canadian is probably more than anything a reflection of the enduring good relationship between my two countries. I can't think of a better example of this happy state of affairs than the present state of the CSHPM: a Canadian academic society, the majority of whose members happen to reside in the US.

To the best of my knowledge, there has never been a serious effort to set up a competing American society, nor am I aware that there was ever any talk of changing our name to the North American SHPM. Instead, there is the general recognition by all members Canadian, American, European, Asian, African and Antipodean that the society as it's presently constituted serves the needs of the international community of historians and philosophers admirably. When I think about why this is the case, a number of factors come to mind:

- Our excellent official journals. Of course, discounted subscription rates to these journals help to make membership in the CSHPM attractive. However, I think there's more to this relationship than saving money. Even non-subscribers recognize the excellent quality of Historia Mathematica and Philosophia Mathematica. This is a case in which the society is happy to be judged by the company it keeps.
- The legacy of Ken May. Kenneth O. May was the catalyst behind the establishment of both the CSHPM and Historia Mathematica. He provided the impulse that brought us where we are today. Those of you who, like me, never knew Ken can

acquaint yourself with his history and his influence on the community of historians and philosophers of mathematics in this continent by reading our archivist Amy Shell-Gellasch's introductory chapter in Mathematics and the Historian's Craft: The Kenneth O. May Lectures, the Springer volume that was released at the Waterloo meeting.

- The Learneds (the Canadian Federation for the Humanities and Social Sciences). Along the lines of the company we keep, our membership in the Learneds makes us part of a larger academic community, one whose annual meetings are enriching as well as relatively inexpensive and very well run. Since the focus of the Learneds is not mathematics or science, it puts our members in a very different intellectual environment than they usually encounter at academic meetings

- Other valuable partnerships with the CSHPS and especially with the British Society for History of Mathematics (BSHM), with whom we have reciprocal membership arrangements and shared annual meetings, the next of which will be in Montreal in 2007. We also have an important if unofficial relationship with the MAA's Special Interest Group in the History of Mathematics (HOM SIGMAA).

- The relaxed, collegial atmosphere that permeates our annual meetings, coupled with scholarship of the highest standards.

Some words of thanks are in order for members of the executive committee that will be stepping down at this year's AGM. First and foremost is Len Berggren, whose term as past president expires then. Len has been a driving force in the society since its earliest days. The 2002-04 term was his third as president of the CSHPM, the others being in the late 1970s and the late 80s. I want to thank him also for the captivating Kenneth O. May Lecture he delivered at the Waterloo meeting.

Thanks also to treasurer David Bellhouse and Council members Amy Ackerberg-Hastings and Roger Godard. Amy will continue to be a member of the Executive Committee ex-officio in her role as co-editor of this Bulletin. Roger and David, both past treasurers, will be missed.

I look forward to seeing you all at the Annual General Meeting at York in late May. The Society is particularly grateful to our local arrangements organizers, Trueman MacHenry and Martin Muldoon, as well as the organizers of the General and Special Sessions, Chris Baltus and Sylvia Svitak. I'm looking forward to an informative and enjoyable meeting.

Rob Bradley

AMS Section Meetings

Karen Hunger Parshall organized a Special Session in History of Mathematics at the 2006 Southeastern Section Spring Meeting of the American Mathematical Society at Florida International University in Miami, FL. The speakers in her session (in order of listing on the program) and the titles of their talks were as follows:

Harold M. Edwards (New York University): "What Were Thought to Be the Foundations of Mathematics Before 1850?"

Adrian Rice (Randolph-Macon College): "The Legacy of Augustus De Morgan (1806-1871)"

Sloan Evans Despeaux (Western Carolina University): "Victorian Mathematical Societies and Their Journals"

David Lindsay Roberts (United States Naval Academy): "'A Peculiar Fascination': A Brief History of Linkages as Objects of Practice, Theory, and Pedagogy"

Joseph W. Dauben (City University of New York): "From the Liberal Arts College to the Research University in the US (Harvard, Princeton and Yale)"

Deborah Kent (Simon Fraser University): "Benjamin Peirce and Educational Initiatives at Mid-Nineteenth-Century Harvard"

David E. Zitarelli (Temple University): "Categorizing Second-tier Mathematicians"

Paul R Wolfson (West Chester University of Pennsylvania): "Topology Visits Algebraic Invariant Theory"

Della D. Fenster (University of Richmond): "Emil Artin in America: A Time of Transition"

Yibao Xu (BMCC/CUNY) "The Tragedy of the Chinese Mathematician Zhang Zongsui (1915-1969)"

Shawnee L. McMurran and James J. Tattersall organized a Special Session in History and Philosophy of Mathematics at the 2006 Western Section Spring Meeting at San Francisco State University. The speakers in their session (in order of listing on the program) and the titles of their talks were as follows:

Shawnee McMurran (California State University, San Bernardino) and James Tattersall (Providence College): "Cartwright and Littlewood on Van der Pol's Equation"

Adrian Rice (Randolph-Macon College): "The Legacy of Augustus De Morgan (1806-1871)"

Reviel Netz (Stanford): "Ludic Proof: Greek Mathematics and the Alexandrian Aesthetic"

V. Frederick Rickey (West Point): "Euler's Introductio of 1748"

Keith Devlin (Stanford): "What Exactly is 'Doing Math'?"

Jennifer E Beineke (Western New England College): "One Hundred Years of Voronoi Summation"

J. J. Tattersall (Providence College) and Shawnee L. McMurran (California State University San Bernardino): "Indian Contributions to The Educational Times, 1876-1918"

Thomas Drucker (University of Wisconsin-Whitewater): "Historiography of the Philosophy of Mathematics in the Late Twentieth Century"

Hardy Grant (York University): "Greek Mathematics and Greek Skepticism"

Joseph W. Dauben (City University of New York): "Suan Shu Shu, A Book on Numbers and Computations: Problems in Collating, Interpreting and Translating the Most Ancient Yet-Known Chinese Mathematical Text"

2005 Financial Statements

The following financial statements cover the period 1/1/2005 through 12/31/2005.

	$ Can.
Income	
dues/subscr.	12862.46
SSHRC travel grant	3480.00
Access (Can. Copyright)	1374.80
TOTAL	17717.26
Expenses	
Philosophia Mathematica	152.96
Historia Mathematica	3418.12
Bulletin	1873.24
Proceedings	1998.56
CFHSS Membership	1940.00
Postage	155.82
Travel	3626.92
Bank charges	5.69
TOTAL	13171.31
NET	4545.95
Balance	18203.86
TD Mortgage Corp.	3254.88
TOTAL	21458.74

Comments:

Because the Society has 2 accounts, one in US dollars, we keep two different accounting systems. At the request of the editors, we have combined the numbers for these accounts. The numbers given are in Canadian dollars. A conversion factor of 1.14 has been used to convert American dollars into Canadian ones.

As of January 1, 2006, the total bank balance was actually a little higher than indicated, but correction has been made for the change in billing practice of *Philosophia Mathematica*. They now bill for the preceding year and the bill of $2054.28 for 2005 was paid in February 2006 (upon receipt of invoice). The $58 above was an adjustment to the 2004 billings.

Note: At the Annual General Meeting of 2005, there was a question of whether our cash assets could be put into an interest-bearing account. Our bank was consulted; for a small business account such as the one held by CSHPM, there is a very large minimum deposit required.

David Bellhouse

David Pingree (1933-2005)

David Edwin Pingree, Chair of the Department of the History of Mathematics and Professor of Classics at Brown University (Providence, RI, USA), passed away on November 11, 2005, in Providence. He is survived by his wife, Isabelle (Sanchirico) Pingree of Providence; a daughter, Amanda of Rome, Italy; a brother, John Pingree of North Palm Beach, FL; another brother, Peter Pingree of North Reading, MA; and a sister, Sarah Dousa of Andover, MA.

Born on January 2, 1933, in New Haven, CT, Professor Pingree spent his youth in Rhode Island and Massachusetts, graduating from Phillips Academy in Andover, MA, in 1950. He received both his undergraduate degree and his Ph.D. from Harvard University. His doctoral dissertation, *Materials for the Study of the Transmission of Greek Astrology to India*, was written under the supervision of Daniel H. H. Ingalls and Otto Neugebauer. After serving as a faculty member of the Oriental Institute at the University of Chicago, he joined the Department of the History of Mathematics at Brown University in 1971, becoming the Chair of the Department in 1986. After assuming the Chair and until his death, Professor Pingree was the sole faculty member in the Department.

Professor Pingree's contributions to his field are impressive indeed. As the title of his doctoral dissertation indicates, his main interest was the transmission of knowledge (scientific ideas in particular) between different cultures, and how the received knowledge was adapted by the recipient culture. During his career, he published some 43 books and monographs and 240 articles, primarily on mathematics, astronomy, astrology and various other kinds of divination, and magic in ancient Mesopotamia, classical Greece, the Hellenistic and Roman empires, ancient and Islamic Middle East, India, Iran, Byzantium, and Latin Europe.

Professor Pingree took a keen interest in manuscripts. Always stressing that research and teaching should make use of original sources, he collected copies of manuscripts and published editions of hitherto unpublished texts. He thus made important works in Sanskrit, Greek, Latin, and other ancient languages available to the scholarly community for the first time. He saw the limitations of attempting to write a history of the exact sciences in antiquity when so many works were still unread or not understood, and therefore he concentrated his efforts on bringing out editions of texts. To further this end, he also catalogued manuscript collections at major research libraries around the world.

In addition to manuscripts, Professor Pingree collected books, including editions and translations of works in various ancient languages, and academic studies and journals. His collection presently comprises more than 25,000 books and a large number of photocopies and films of manuscripts, and it is an immensely important research resource.

Between teaching, being the Chair of a Department, publishing books and articles, working with and cataloguing manuscripts, and collecting and organizing books and manuscripts, Professor Pingree did much more than a normal person can hope to accomplish in a lifetime. Despite this fact, however, Professor Pingree never appeared stressed or busy. Always welcoming, he would happily put aside what he was working on when a visitor came and generously give of his time in discussing and answering questions. When the visitor left, he would continue his work precisely where he had left it.

In honor of Professor Pingree's scholarship and dedication to his work, he was elected as a Junior Fellow at Harvard University's Society of Fellows. Later in life, he was, among other things, awarded a Guggenheim Fellowship and a MacArthur Fellowship.

Commencing my studies in September 2002, I was the last student that Professor Pingree accepted into the History of Mathematics program at Brown University. As a teacher, Professor Pingree expected much from his students, constantly challenging them intellectually. He was always supportive and generous with his time, and he always took care that his students had funding and were faring well.

When I first arrived, Professor Pingree welcomed me warmly and personally took me to all the important places on campus, made sure that I had the documents and cards that I needed, and so on. Soon after this, I found myself sitting daily at one side of a table

crowded with stacks of books and manuscripts. Professor Pingree would sit on the other side of the table, and together we would read esoteric Sanskrit, Arabic, and Greek texts.

I have many fond memories of Professor Pingree explaining a difficult passage or laughing at the folly of an ancient commentator. At times, when I had run out of material for the remainder of the class, we would just talk, and he would share his immense learning with me or simply tell me of the blueberries he and his wife were growing at their holiday home in Connecticut. Beyond his learning, Professor Pingree shared his kindness with me. He and his wife were always welcoming and kind, making my experience in graduate school a good one. Professor Pingree only saw the first few buds of my dissertation, but I hope that it will blossom into something of which he would have been proud.

Professor Pingree was a great scholar and a good man. As a scholar he left a space that can hardly be filled. He will be fondly remembered by those who knew him.

Toke Lindegaard Knudsen

History of Math at the Winter CMS Meetings

A group of speakers from the CSHPM kept the history of math flag flying at the Winter Meetings of the Canadian Mathematical Society in Victoria on December 10 and 11, 2005. Both sessions were well attended and for several of the talks, the room, with its 25 seats, was at standing room only.

The following accounts of the talks are presented in the order in which the talks were given. They are based on the speakers' abstracts, the full versions of which may be read on the CMS website.[1]

Glen Van Brummelen, Bennington College, spoke on "Controversies in the Early History of Trigonometry." He surveyed evidence that supports arguments for the alleged origin of trigonometry in ancient Egypt and Babylon. In both this and his discussion of "which Greek and Indian mathematicians contributed what" he argued for a conservative chronology of the subject.

Nathan Sidoli, Simon Fraser University, spoke on "Ratio in the Late Ancient Commentators." He argued that the theory of compound ratio seems never to have been fully established by Greek mathematicians, despite their wide use of the idea. Attempts by Theon and Eutocius to give a theoretical foundation to the practices, although trivial from a mathematical perspective, introduce interesting and important shifts in the underlying definitions. These late ancient views were then taken over, and built upon, by mathematicians in medieval Islam.

Lennart Berggren, Simon Fraser University, in his talk "Creating Mathematics Textbooks in the 13th Century," spoke on Aristarchos of Samos's *On the Sizes and Distances of the Sun and Moon*. He called attention to a number of puzzling features both of the work itself and of its tradition of study in medieval Islam. (The talk represents joint work with Nathan Sidoli.)

Alexander Jones, University of Toronto, spoke on "The Euclid Enigma." He questioned the traditional dating of Euclid to the late fourth century B.C. and argued that he was more likely a contemporary of Eratosthenes and Archimedes. Moreover, he was, initially, best known as an original mathematician, and only in the time of the Roman Empire did his name become almost exclusively associated with the *Elements*.

Hardy Grant, York University, spoke on "The Curious Case of the 'Mathematicals' in Greek Antiquity." In the talk he discussed the repeated attempts, inspired by the writings of Plato, to identify soul with the objects of the mathematical sciences and the special role that astronomy played in this endeavour.

Byron Wall, York University, in "John Venn's Opposition to Probability as Degree of Belief" examined Venn's advocacy of the interpretation of probability as the frequency of a particular outcome in a potentially unlimited series of events. This view Venn held to be incompatible with the alternate interpretation of probability as the degree of belief that one would rationally hold about a certain event based on reliability of testimony and other prior information. Venn's

[1] See http://www.cms.math.ca/Events/winter05.

belief may have been a way for him to resolve a conflict in his own mind between his ideas of proper scientific methods of inference and the religious beliefs that he held as a young man.

Len Berggren

AGM of CFHSS

The Annual General Meeting of the Canadian Federation of Humanities and the Social Sciences took place in Ottawa on November 26-27, 2005. Members of CSHPM might be interested in the following:

- Congress. 7200 attended at the University of Western Ontario in 2005. Plenary speakers at York (May 27-June 4, 2006) will include Stephen Lewis and David Suzuki. Also, equipment fees have been waived. The 2007 Congress will be held at the University of Saskatchewan, the 2008 at University of British Columbia, and the 2009 at Carleton University. All of the universities in Montréal will jointly host the 2010 Congress, and 2011 will be somewhere in Atlantic Canada.
- Copyrights. Canadian Bill C-60 has still not passed Parliament. The CFHSS deems this bill sometimes harmful to its members.
- Session on Recruitment. The only suggestion that I thought useful was that professors, through their classes, recruit students in the graduate years and in the final undergraduate years for their respective societies.
- Canada Foundation for Innovation. The president of the Foundation, Dr. Eliot A. Phillipson, explained that the Foundation was created by Parliament and is in charge of Granting Councils (such as SSHRC) and Canada Research Chairs. He pointed out that Canada has had a budget surplus since 1997 and is the leader (by percentage) of all G-7 countries in funding higher education. In fact, he stated that the brain drain problem in Canada has gone away.
- Open Access. In my opinion, the most important concern raised at the CFHSS meeting was how to address the problem that more scholarly journals are published than libraries can afford to purchase. For example, Canadian scholars produce about 50,000 research journal articles each year. How are other scholars to access these articles so they might use them to further their own research? According to Steven Harnad of UQAM, only 15% of researchers currently provide electronic versions of their own final drafts free to all scholars through their own institutional websites. A CFHSS panel was hard at work on this subject.

Ed Cohen

Announcements

Rob Bradley was united in marriage with Susan Petry on January 3, 2006, with Ed Sandifer ensuring proper decorum as best man. Our heartiest congratulations go out to Rob and Susan, who has been a long-time friend of CSHPM (perhaps) despite her gainful employment as an experimental psychologist at Adelphi University.

The Midwest History of Mathematics Conference will take place at Penn State Erie, The Behrend College, on October 13-14, 2006. The keynote speaker will be William Dunham, Koehler Professor of Mathematics from Muhlenberg College and best selling author. On Saturday, October 14, he will present the talk "Euler in Three Acts," to recognize next year's 300th anniversary of Leonhard Euler's birth. As the local organizer, Antonella Cupillari solicits talk submissions and invites colleagues to attend. The forms for registration and submission of abstracts (by August 15, 2006), may be found at her website[2]. A tentative schedule of the conference is posted at the same website. The College is easy to reach on I-90, and Pennsylvania is beautiful in the fall. Consider participating and presenting!

The AMS is reprinting Robert Thomas and Len Berggren's *Euclid's Phaenomena: A translation and study of a hellenistic treatise in spherical astronomy*, as part of the AMS/LMS History of Mathematics Series.

[2]See http://www.personal.psu.edu/axc5/; alternatively see http://math.bd.psu.edu/HistoryConference/

In late 2005, the MAA published *From Calculus to Computers: Using the Last 200 Years of Mathematics History in the Classroom*, edited by CSHPM archivist Amy Shell-Gellasch and by Dick Jardine. Chapters contributed by CSHPM members included: "Teaching Elliptic Curves Using Original Sources," by Lawrence D'Antonio; "Euler on Cevians," by Eisso Atzema and Homer White; "From the Tree Method in Modern Logic to the Beginning of Automated Theorem Proving," by Francine F. Abeles; "Foundations of Statistics in American Textbooks: Probability and Pedagogy in Historical Context," by Patti Wilger Hunter; "Building a History of Mathematics Course from a Local Perspective," by Amy Shell-Gellasch; and "Protractors in the Classroom: An Historical Perspective," by Amy Ackerberg-Hastings.

The 2005-2006 program of the Philadelphia Area Seminar on the History of Mathematics (PASHoM) included the following speakers: Ed Sandifer (Western Connecticut State University), "A Series of Extraordinary Events: How Some Lesser Euler Fits Together" on 15 September 2005; Reinhard Siegmund-Schultze (Adger University College, Norway), "Richard von Mises: A Non-conformist Between Mathematics, Engineering, Philosophy and Politics" on 17 November 2005; Alan Gluchoff (Villanova University), "The Contributions of Four 'Mathematical People' to the Mathematical Ballistics of the World War I Era in America" on 8 December 2005; Chris Rorres (University of Pennsylvania), "If Archimedes Had a Computer: Continuing his Work on Floating Bodies" on 19 January 2006; Bill Ewald (University of Pennsylvania), "Hilbert's Papers" on 16 February 2006; Peter Freyd (University of Pennsylvania), "Saunders Mac Lane, an oral history" on 20 April 2006; and Shelley Costa (Swarthmore College), "Making a Name for Oneself in Professional Mathematics: Women's Lives and "Women's Work" in the 19th Century" on 18 May 2006. The 2006-2007 year will begin with Alexander Soifer on 21 September 2006, Adrian Rice (Randolph Macon College) on 16 November 2006, and Paul Wolfson (West Chester University) on 14 December 2006.

The Frederick V. Pohle Colloquium in the History of Mathematics hosted by the Department of Mathematics & Computer Science at Adelphi University presented the following speakers this past year: James Lightner (McDaniel College), "Remembering Howard Eves" on 28 September 2005; David Richeson (Dickinson College), "Euler's Polyhedral Formula" on 2 November 2005; Amy Ackerberg-Hastings (University of Maryland University College), "John Playfair: The Mathematics of Correspondence" on 7 December 2005; Sandro Caparrini (Dibner Institute), "The Discovery of the Vector Properties of Moments and Angular Velocity" on 1 February 2006; Alexander Jones (University of Toronto), "Locus Theorems in Ancient Greek Geometry" on 1 March 2006; Brian Hopkins (St. Peter's College), "Königsberg: What Euler Did and Did Not Do" on 5 April 2006; and Harry Coonce (North Dakota State University), "Tales from the Genealogy Project" on 3 May 2006.

CMS Summer Meeting

Tom Archibald organized a Special Session on Recent Work in History of Mathematics for the 2006 Summer Meeting of the Canadian Mathematical Society at the University of Calgary. The speakers in the session will include: Tom Archibald (Simon Fraser U.), Marcus Barnes (Simon Fraser U.), June Barrow-Green (Open Univ., Milton Keyes, UK), Branko Grünbaum (U. of Washington), Deborah Kent (Simon Fraser U.), Reinhard Siegmund-Schultze (Harvard; Agder Univ. College, Norway), and Laura Turner (Simon Fraser U.).

CSHPM/SCHPM Meeting

Please note that abstracts for all of the talks are available on the Society's website.[3]

Sunday, May 28

OPENING REMARKS, 8:45 AM

[3]See http://www.cshpm.org

Special Session: Mathematics, Politics, Society, and Education

9:00 - 9:30 Thomas L. Bartlow, Villanova University: Mathematics and Politics: Apportionment of the United States Congress

9:30 - 10:00 Amy Ackerberg-Hastings, University of Maryland University College: John Playfair and the Culture of Mathematics: From Enlightenment to Romanticism

10:00 - 10:30 Jonathan Seldin, University of Lethbridge: Thoughts on Teaching Elementary Mathematics

11:00 - 12:00 KENNETH O. MAY LECTURE by Chandler Davis, Professor Emeritus, University of Toronto

Special Session: Mathematics and Art

1:45 - 2:15 Hugh McCague, York University: The Mathematics of the Canon of Polykleitos, an Exemplar of Greek High Classical Sculpture and Western Culture

2:15 - 2:45 Paolo Palmieri, University of Pittsburgh: Motion and Stasis in Galileo and Cigoli

2:45 - 3:15 Alejandro R. Garciadiego, Mexican National University: Mathematics and Art at the Main Campus of the Mexican National University: A Work of Daz, a Recent Acquisition

Special Session: Mathematics, Music, Literature, and Philosophy

3:30 - 4:00 Michael Molinsky, University of Maine at Farmington: Mathematics in Detective Fiction

4:00 - 4:30 Jozsef Hadarits, University of Toronto: Music of the Circles: π and John "Longitude" Harrison's Musical System

4:30 - 5:00 Byron Wall, York University: Why John Venn Stopped Thinking about Probability and Logic at the End of the 19th Century

Special Session: Mathematics and Its Relationship with the Sciences

5:15 - 5:45 Chris Bissell, Open University: Math? What math? How mid 20th century information engineers subverted mathematical formalism

5:45 - 6:15 Thomas Drucker, University of Wisconsin Whitewater: Quantification and the Loss of Certainty: The Case of Social Science

Monday, May 29

General Session A: Problems Old and New

8:00 - 8:30 Carlos Bovell: A right angle is a right angle, right? Musings on Euclid's fourth postulate

8:30 - 9:00 Christopher Baltus, SUNY Oswego: The Conics of Apollonius: Book 1 for Beginners

9:15 - 9:45 Jim Tattersall, Providence College (and Shawnee L. McMurran, Cal. State San Bernardino): Indian Contributions to the Educational Times 1876-1918

9:45 - 10:15 Antonella Cupillari, Penn State Erie, (and Kate E. Overmoyer, Bowling Green University): Of square fields, circular islands, and other peculiar probabilities

10:15 - 10:45 Andrew Perry, Springfield College: Evolution of 19th Century American Elementary Algebra Textbooks

11:00 - 11:30 Joel Silverberg, Roger Williams College: Beyond the Sailings: The Birth of Modern Celestial Navigation

11:30 - 12:00 Ed Cohen, University of Ottawa: Ancient Egyptian Calendars

General Session B: Modern Mathematics

8:00 - 8:30 Paolo Rocchi, IBM: Probability P(A); A Historical Excursus through Models for Argument A

8:30 - 9:00 Miriam Lipschutz-Yevick, Rutgers University: Postulates or Dogma

9:15 - 9:45 David Orenstein, University of Toronto: Helen Hogg's Mathematical Methods for Variable Stars in Globular Clusters

9:45 - 10:15 Roger Godard, Royal Military College of Canada: Orthogonality and Approximation: Chebychev to JPEG

10:15 - 10:45 Tom Archibald, Simon Fraser University: Integral and Integro Differential Equations to 1920

11:00 - 11:30 Dirk Schlimm, McGill University: On the importance of asking the right research questions: Could Jordan have proved the Jordan-Hölder Theorem?

11:30 - 12:00 Abe Shenitzer, York University: Reading from his translation of a paper on Grothendieck

CSHPM EXEC. CNCL. MEETING, 12:00 - 2:00

General Session: Mathematics in Islam and Early Modern Europe

2:00 - 2:30 Len Berggren, Simon Fraser University, and Nathan Sidoli: Aristarchos from Greek to Arabic

2:30 - 3:00 Lawrence D'Antonio, Ramapo College: Al-Kashi's Method of Root Extraction

3:00 - 3:30 Barnabas Hughes, Cal State Northridge: Fibonacci's De Practica Geometrie

Special Session: Mathematics and War

3:45 - 4:15 William W. Hackborn, University of Alberta: The Science of Ballistics: Mathematics Serving the Dark Side

4:15 - 4:45 Maryam Vulis, Queensborough Community College, CUNY: The Work of Cryptographers Agnes Meyer Driscoll and Genevieve Grotjan During World War II

CFHSS PRESIDENT'S RECEPTION, 5:00 - 7:00

Tuesday, May 30

Special Session: Mathematics ↔ History

8:00 - 8:30 Ruth Whitmore, University of Wisconsin - Whitewater: Why Base-60? A Satisfying Account

8:30 - 9:00 Duncan Melville, St. Lawrence University: Problems as Evidence

General Session: Logic and Philosophy

9:15 - 9:45 Glen Meyer, Austin Community College: The Instrumental Use of Continuous Orders: A Challenge for Hartry Field's Nominalization Program

9:45 - 10:15 Cyrus Panjvani, Ithaca College: Carnap, Conventionalism, and Consistency

10:15 - 10:45 Josipa Petrunic, University of Edinburgh: Empiricism and logic: The influence of William Kingdon Clifford's non-Euclidean geometry on the works of Bertrand Russell

11:00 - 11:30 Francine Abeles, Kean University: Lewis Carroll's Diagrammatic Logic System as a Proof Method for Syllogisms

11:30 - 12:00 M. Serfati, Institut de Recherche sur l'Enseignement des Mathématiques, Université Paris VII-Denis Diderot: Symbolic practices and mathematical invention in Leibniz's mathematics

CSHPM ANNUAL GENERAL MEETING (LUNCH INCLUDED), 12:00 - 2:00

General Session: Newton to the 19th Century

2:00 - 2:30 Charles Rocca, Western Connecticut State University: The Cryptological Work of the Rev. John Wilkins

2:30 - 3:00 Ed Sandifer, Western Connecticut State University: Euler, Newton, and the Expulsion of the Geometers

3:00 - 3:30 Brian Hepburn, University of Pittsburgh: Was Euler a Newtonian?

3:45 - 4:15 Israel Kleiner, York University: The Principle of Continuity: A Brief History

4:15 - 4:45 Craig Fraser, University of Toronto: The Concept of Analysis in 18th Century Mathematics

5:00 - 5:30 Sandro Caparrini, Dibner Institute: On the Common Origin of Some of the Works on the Geometrical Interpretation of Complex Numbers

5:30 - 6:00 Rob Bradley, Adelphi University: Reflections on the Vibrating String Problem

Quotations in Context

The inspiration for this column comes from the infamous quotation by St. Augustine:

> The danger already exists that the mathematicians have made a covenant with the devil to darken the spirit and to confine man in the bonds of Hell.

Taken out of context, this certainly sounds like a vicious onslaught on the character of anyone working the field of mathematics; however, most modern sources follow this quotation with the disclaimer that St. Augustine was really talking about the dangers of astrology and astrologers, not people engaged in geometry or number theory.

Quotations about mathematics and mathematicians abound. Many mathematics textbooks, for example, include a variety of quotations at the beginning or end of each chapter. These quotations may be witty or serious, they may be about mathematics or by a mathematician, but they usually have one thing in common: they tend to be offered without citation or any information about the context from which the quotation arose.

The goal of this column is to select some of the more common quotations in mathematics and explore the publication or setting from which they came. Our hope is that many readers of the Bulletin will be inspired to supply future columns on their own favorite quotations in context.

> Thus mathematics may be defined as the subject in which we never know what we are talking about, nor whether what we are saying is true. – Bertrand Russell

This quotation originally appeared in an article, "Recent Work in the Philosophy of Mathematics," published in 1901 in *The International Monthly.* Russell later included the work in his book *Philosophical Essays*, published in 1910. Later editions of this book were entitled *Mysticism and Logic* instead, and the essay in question appeared as the chapter, "Mathematics and the Metaphysicians." At this point, Russell amended the essay with some corrective footnotes, reflecting changes in the understanding of some of the topics in the intervening years.

The article was intended for a popular audience and covers topics such as Zeno's Paradoxes of motion, infinitesimals and infinite cardinals, and the differences between Euclid's work and that of modern geometers. The overall theme of the chapter concerns the definition of mathematics.

Russell opens the essay with the claim that "pure" mathematics was born in the nineteenth century, specifically in the work of George Boole. Pure mathematics, in this context, is defined as identical to formal, symbolic logic. Russell argues that real mathematical work is concerned with discovering rules of valid inference; for example, given that property A is true of anything, can you safely conclude that property B is true of anything? He states that questions about whether or not property A really is true, or what the "thing" is that we are talking about, are questions that belong to "applied" mathematics.

It is at this point in the chapter that the quotation appears. Since Russell is considering mathematics as nothing but formal logic, and since he requires that mathematics be distinguished from the "applied" world by concentrating on the validity of rules of inference and not the validity of the hypotheses on which those rules are used, he sums this argument up with the given quotation. In the context of the article, the quotation appears to be a somewhat tongue-in-cheek, but accurate, summation of the idea that rules of inference are not concerned with what the hypotheses of an argument are or whether they are true.

In closing, I'd like to include the line that follows the quotation in question:

> People who have been puzzled by the beginnings of mathematics will, I hope, find comfort in this definition, and will probably agree that it is accurate.

Bibliography:

Russell, Bertrand *Mysticism and Logic* (New York: Barnes & Noble, 1917)

Mike Molinsky

Middle Atlantic Symposium

The first Middle Atlantic Symposium on History of Mathematics was held October 13-15, 2005, at Villanova University. The Philadelphia Area Seminar in the History of Mathematics (PASHoM) and the Department of Mathematical Sciences of Villanova University sponsored the symposium. Financial support was provided by Franklin & Marshall College and by the Department of Mathematical Sciences of Villanova University. The symposium was organized by Thomas Bartlow of Villanova and George Rosenstein of Franklin & Marshall and was modeled after one formerly organized by Uta Merzbach at the Smithsonian Institution.

For the symposium, each participant was expected to read Euler's Introductio in Analysin Infinitorum, Book 1 either in Latin or in English. Each participant was expected to prepare a short paper for presentation and discussion at the symposium. The topic was to be related to the reading, but might include aspects of Euler's life or other work. After an opening reception Thursday evening, there were sessions on Friday and Saturday, both morning and afternoon. The Friday morning and afternoon and Saturday morning sessions were devoted to the presentations and discussion; the session on Saturday afternoon was devoted to a discussion of the continuation in following years of the symposium.

Nine people attended the symposium; there were eight papers. Arthur Milgram sketched Euler's life, George Rosenstein asked the question, "What is this book?" and Fred Rickey compared the calculus textbooks of Agnesi and of Euler in the Friday morning session. Friday afternoon, Florence Fasanelli looked at images of Euler in the history of art, Tom Bartlow looked at a translation problem and Dan Hajjar talked about the effectiveness of Euler's substitution schemes from the perspective of a calculus teacher. Finally, Saturday morning, Ed Sandifer talked about the word problems in the Introductio and Rob Bradley discussed Euler and the partition function, the topic of Chapter XVI. The discussions following each paper were lively and informative, even when they drifted off of the immediate topic.

In the Saturday afternoon session, there was a frank discussion of the strengths and weaknesses of the symposium. Some changes were made in the format, and the group decided to try again in 2006. This year, the symposium again will be held at Villanova, October 12-14. Each participant is expected to read through Book 4 of Gauss's Disquistiones Arithmeticae, either in Latin or in its English translation. There will be, during the course of the Symposium, six presentations on the life and/or work of Gauss. Thursday evening, October 12, there will be a regular meeting of the PASHoM seminar with a presentation related to Gauss and his work. A modest registration fee will be charged to cover the cost of continental breakfast, lunch, and coffee on Friday and Saturday.

If you are interested in participating in the Symposium—no commitments necessary at this point—please email George Rosenstein[4] or write him at 644 State St., Lancaster, PA 17603 to be added to the mailing list.

George Rosenstein

Book Review

The Book of Presidents 1865-1965. Susan Oakes (photographs) and Alan Pears (biographies), with an historical introduction by Adrian Rice. London, London Mathematical Society, 2005, ix + 157 pp.

Founded in 1865 by Augustus De Morgan (who served as its first president), the London Mathematical Society is one of the oldest mathematical societies in the world. Its rich history unfolds in this book through the biographical sketches of its presidents, mainly, throughout the first 100 years of its existence. Many of these figures are well-known to both mathematicians and historians of mathematics, but there are also several presidents who are little-known today. Alan Pears has compiled the biographical material from a variety of sources, especially obituaries. Each president who served between 1865 and 1965 receives a full page entry; additionally, there are half page entries for the presidents from 1965 to 2003. Susan Oakes has supplied a full page photographic image for

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the long entries, and half page images for the short entries. Each entry supplies the education, positions held, honors and awards, and mathematical interests for the president; the long entries also have a short description of his/her important mathematical accomplishments.

The final twenty-five pages are a cornucopia of information. They include a list of the presidential addresses (author and title) from 1870 to 2004, most of which were published by the LMS. Also included is a list from 1884 to 2003 of the forty-one De Morgan medalists, the Society's highest honor, which is awarded to illustrious mathematicians who did at least some of their work in the United Kingdom. Four of these are given long entries (Felix Klein, Bertrand Russell, Abram S. Besikovich, Geoffrey Taylor); seven more, from 1956 to 2004, have short entries. The book ends with a list of the Society's honorary members from 1867 to 2004 (a veritable "who's who" of mathematics) and with a glossary describing Cambridge University's Mathematical Tripos and Wranglers, the Smith's Prize, and Adams Prizes; the named chairs at Cambridge, Manchester, Oxford, and University College London; the LMS prizes; the Royal Society medals; and the Order of Merit. The index provides only the names of the presidents and the De Morgan medalists.

Adrian Rice's introduction gives a detailed history of the LMS and its activities from its inception to the present time. This material supplies the much needed setting for the biographical entries that follow. The American Mathematical Society recently inaugurated a timeline of its presidents on the web[5] that provides information similar to what is in this book, but with the advantage of enabling links to even more extensive information.

Francine F. Abeles

HOM SIGMAA Book Club

The MAA's Special Interest Group in History of Mathematics launched a Virtual Book Club in February 2006, moderated by Amy Shell-Gellasch. Several other CSHPM members were among the 28 participants who read and discussed (via email) *Gauss: Titan of Science* by G. Waldo Dunnington, (New York: Hafner, 1955; reprint, MAA, 2004). The book club's goal is to look at three expository books in history of mathematics each year. Participants must belong to the HOM SIGMAA, but they are welcome to join or leave the book club with each book. Topics raised with Gauss included: the pros and cons of mathematical biographies penned by non-mathematicians, the volume of Gauss's contributions to "applied" sciences such as geodesy, why Gauss's work on determining the date of Easter ought to be of interest, the historical context of the German states in the mid-nineteenth century, and the problems of determining Gauss's role in the development of non-Euclidean geometry–for which Jeremy Gray's additions to the MAA edition provoked further thought. Contact Amy at amy.shellgellasch@us.army.mil for information on the book choice for Summer 2006.

2006 Kenneth O. May Lecturer: Chandler Davis

CSHPM is honored and proud to announce that Chandler Davis, Professor Emeritus, Department of Mathematics, University of Toronto, will be the keynote speaker for the Special Session, Mathematics in the Wider Culture, at the May 2006 meeting at York University. The title and abstract of his presentation are available on the society's website.[6]

Chandler Davis embodies the connection between mathematics and the wider culture through many entwining strands of interests and activities. Here is a small sampling.

A pre-eminent mathematician, Dr. Davis received his Ph.D. in mathematics from Harvard in 1950 and has been a professor at the University of Toronto since 1962. He is recognized in the mathematical and science communities for his results in matrix and operator theory, and for his work on other analytic and geometric issues. Some of his best-known contributions to mathematics include his work with William Kahan, Donald Knuth, and Rajendra Bhatia. The current

[5]See http://www.ams.org/ams/amspresidents.html

[6]See http://www.cshpm.org. The photograph of Chandler Davis was taken from http://www.umich.edu/ aflf/davis.htm.

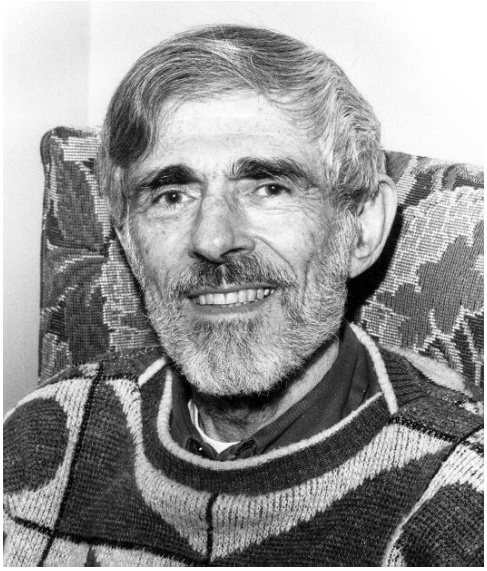

Figure 1: Chandler Davis

scientific literature attests to the ongoing significance of the results that he achieved in these collaborations. Chandler Davis is the long-time Editor-in-Chief of The Mathematical Intelligencer, a post he now shares with Marjorie Senechal of Smith College. His leadership on this journal brings the history and culture of mathematics to a broad audience of mathematicians and the wider intellectual community. His active role to promote creative writing in the mathematical sciences extends to other ventures; the latest is as an organizer for the Creative Writing in Mathematics and Science Workshop to be held at the Banff International Research Station, June 17-22, 2006. Chandler Davis's steadfast concern for humanity and determination to act on principle despite personal cost has earned him wide respect. As a young tenure-track instructor at the University of Michigan during the McCarthy era, he chose to challenge the constitutionality of the House Un-American Activities Committee and refused to testify without invoking Fifth Amendment protection from self-incrimination. This cost him his job and led to a six-month prison term in 1960. In his article, "The Purge" (published by the AMS in A Century of Mathematics in America, 1989), he recounted the casualties of McCarthyism in the mathematical community. In addition to his mathematical writings, Chandler Davis has authored science fiction stories, poetry, and articles on philosophical and social issues that speak for a mathematician's concern for the wider culture.

CSHPM looks forward with great anticipation to the May meeting to greet Chandler Davis and to hear his presentation.

Sylvia Svitak

Web Review: History of Statistics

One of the most comprehensive gatherings of information and links on the history of probability and statistics contained across the Internet can be found on the website of the Department of Mathematics of the University of York in the United Kingdom.[7]

The first link on the page leads to a huge directory of images of statisticians. A few of the images are not of very high quality or are poorly scanned, but most are relatively clear and sharp. The list of images includes not only statisticians from history, but also from the present day (for example, our outgoing Treasurer, David Bellhouse). A complete list of sources is provided for all of the images, which is somewhat of a rarity in today's "cut-and-paste" world.

The next category on the main page, and easily the most valuable resource on the entire website, is a large directory of links to statisticians' biographies and works. Most of the biography links lead to the St. Andrews MacTutor website, but some additional biographical sites are included for many individuals. Many of the links provide access to research articles written about individual statisticians or statistical concepts, such as Daniel J. Denis's paper, "The Origins of Correlation and Regression: Francis Galton or Auguste Bravais and the Error Theorists?" Still other links provide access to important historical works on probability and statistics, of which the following are only a small sample:

- The correspondence between Pierre de Fermat and Blaise Pascal on the subject of probability
- R. A. Fisher's Statistical Methods for Research Workers

[7] See http://www.york.ac.uk/depts/maths/histstat/

- William Gossett's 1908 paper on the t-test, "The Probable Error on a Mean"
- Thomas Bayes's "An Essay Towards Solving a Problem in the Doctrine of Chances"

The main page also provides links to several websites on graphical techniques. The first such site is "Milestones in the History of Thematic Cartography, Statistical Graphics, and Data Visualization,"[8] which is provided by a different York University (the site of our annual meeting in Toronto this May) and is organized around a timeline. Similar to the directory discussed above, this timeline contains links to biographical information, images of maps and graphs, and research articles. Another site, "The Gallery of Data Visualization,"[9] provides a directory of examples of both good and bad graphs throughout history.

In addition to the directories listed above, the site also provides links to general history of mathematics resources (including the CSHPM website). A few of the resource links were somewhat disappointing. For example, the file "Some Quotable Quotes for Statistics" contains a collection of over 2000 quotations; however, the majority of the items are amusing, but not actually about statistics or even mathematics in general.

Overall, the site provides a valuable catalog of information and references for the history of probability and statistics. I have made good use of the site in my teaching (both the history of mathematics and introductory statistics), and there is still plenty of material remaining for me to explore.

Mike Molinsky

New Members

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

Peter Benbow,
Santa Barbara, CA
USA

Max Blumberg
Hants
U.K.

Carlos Bovell
Burlington, NJ
USA

Evan Wm. Cameron
York University
Toronto, ON
Canada

Yousuf Kerai
Bennington College
Bennington, VT
USA

Alexander F. Kleiner
Drake University
Des Moines, IA
USA

Brian Loane
Kent
U.K.

Katharine Merow
North Wales, PA
USA

Glen E. Meyer
Austin, TX
USA

Larson Powell
Texas A & M University
College Station, TX
USA

Charles F. Rocca, Jr.
New Milford, CT
USA

Darrell Rowbottom
Durham
U.K.

Homer White
Georgetown College
Georgetown, NY
USA

[8] See http://www.math.yorku.ca/SCS/Gallery/milestone/
[9] See http://www.math.yorku.ca/SCS/Gallery/

Michael Wright
Fougères
France

Julia Xenakis
Bennington Colle Bennington, VT
USA

From the Editor

In this issue, you will find ample reasons to join us for Congress at York in May. The special session on "Mathematics and the Wider Culture" has attracted an intriguing mix of talks, as well as the keynote address to be delivered by Chandler Davis. With a substantial number of participants in the general session as well, we will need to run parallel sessions on Monday, May 29. Indeed, there are 45 presenters scheduled in all, for a rich three-day meeting.

In addition, the Canadian Society for the History and Philosophy of Science will be holding its annual meeting May 29-31. Although plans are not firm at this writing, our local arrangements chairs, Martin Muldoon and Trueman MacHenry, are hoping to schedule a joint reception with CSHPS as well as carrying out their usual duties. Even informally, I encourage you to interact with CSHPS and our other sister societies in the Canadian Federation for the Humanities and Social Sciences at Congress.

While we are on the subject of fellow academic societies, let me remind you that one of the major topics at the AGM will be next year's joint meeting with the BSHM in Montréal. Rob Bradley, Tom Drucker, and Jean-Pierre Marquis are hard at work making initial plans for facilities and housing, but they can always use additional suggestions and offers to take on some of the necessary legwork.

I know that our members were sorry to see David Pingree's pioneering years of service to our discipline come to an end last fall. I am deeply appreciative, though, that Toke Lindegaard Knudsen, David's last doctoral student, took time away from his dissertation work to prepare the moving obituary you will find in these pages. I am delighted also to let you all know that Toke has assembled a new committee and expects to finish his Ph.D. on schedule, in 2007. Our best wishes go out to him for the completion of his studies.

This issue also marks the debut of what Mike Molinsky and I hope will become a regular feature of the Bulletin, the "Quotations in Context" column. If you have an idea for a quotation that ought to be explicated or are willing to write such an explication, do get in touch with me. Similarly, you will note that personal and professional news items have made a return to the Announcements section. Please consider passing along your milestones so that we can all celebrate with you.

Finally, the ballot for Councilors who will serve the Society from 2006 to 2008 accompanies this newsletter. Be sure to take a few minutes to register your preferences with the Secretary. Hope to see you at York!

Amy Ackerberg-Hastings

About the Bulletin

The *Bulletin* is published each May and November, and is co-edited by Amy Ackerberg-Hastings (aackerbe@erols.com) and Eisso Atzema (atzema@math.umaine.edu). Material without a byline or other attribution has been written by the editors. Les pages sont chaleureusement ouvertes aux textes soumis en français. Comment and suggestions are welcome, and can be directed to either of the editors; submissions should be sent to Amy Ackerberg-Hastings and Eisso Atzema at the above e-mail address, or by snail mail to Amy Ackerberg-Hastings, 5908 Halsey Road, Rockville, MD 20851.