BULLETIN
CSHPM/SCHPM

WHAT'S INSIDE
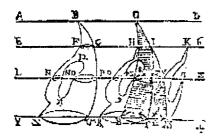
Meetings

Obituaries

**Canadian Society for History
and Philosophy of Mathematics**

**Société canadienne d'histoire et
de philosophie des mathématiques**

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: **Glen Van Brummelen**, Bennington College, Bennington, VT 05201,USA, <gvanbrum@bennington.edu>
Vice-President: **Len Berggren**, Math. Dept., Simon Fraser Univ., Burnaby, BC V5A 1S6, Canada, <berggren@sfu.ca>
Secretary: **Pat Allaire**, Dept. of Math. & C.S., Queensborough C. C., Bayside, NY 11364, USA, <pallaire@qcc.cuny.edu>
Treasurer: **Robert Thomas**, Dept. of Math., University of Manitoba, Winnipeg, MB R3T 2N2, Canada <thomas@cc.umanitoba.ca>

Members of Council:

Rebecca Adams, Mathematics Department, Vanguard Univ., 55 Fair Drive, Costa Mesa, CA 92626, USA, <radamsca@yahoo.com>
Roger Godard, 92 Florence St. Kingston, ON K7M 1Y6, Canada, <godard-r@rmc.ca>
Hardy Grant, 539 Highland Ave., Ottawa, ON K2A 2J8, Canada, <hgrant@ncf.ca>
Alexander Jones, Department of Classics, University of Toronto, 97 St. George Street, Toronto, ON M5S 2E8, Canada <ajones@chass.utoronto.ca>

The Society's Web page, is maintained by **Robert Bradley**, Adelphi Univ. Garden City, NY 11530, USA <www.Adelphi.edu/cshpm> or <www.cshpm.org>.

The Proceedings of the Annual Meeting is edited by **Michael Kinyon**, Dept of Math. & C.S., Indiana University South Bend, South Bend, IN 46634 <mkinyon@iusb.edu>

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

American Mathematical Society Western Sectional Meeting

A Special Session on History of Mathematics was held at the American Mathematical Society Western Section Meeting at the University of Nevada at Las Vegas, April 21-22, 2001. The session was organized by **Adrian Rice**, Randolph-Macon College, **Shawnee McMurran**, California State University at San Bernardino, and **Jim Tattersall**, Providence College.

Speakers included:
Paul R. Wolfson, West Chester Univ. *The influence of relativity on invariant theory;*
Joel Stein, California State University at San Bernardino, *The notebooks of Gian-Carlo Rota;*
Adrian Rice, *Inexplicable? The status of complex numbers;*
Victor Shapiro, University of California at Riverside, *Harmonic functions on the unit disc;*
Glen Van Brummelen, Bennington College, *The birth of independent trigonometry: Revolution and conflict in tenth-century Islamic spherical astronomy;*
Hardy Grant, York Unversity, *Noneuclidean geometry before Euclid?;*
Amy Shell, U.S. Military Academy, *Mina Rees's influence on graduate education;*
Fran Abeles, Kean College of N.Y., *Lewis Carroll's 'Game' of voting;*
Shawnee McMurran *Paul Dirac and the application of beautiful mathematics;*
Jim Tattersall *French contributions to the 'Educational Times'.*

CSHPM/SCHPM members were well represented.
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Jim Tattersall, Department of Mathematics, Providence College, Providence, RI 02918

WEB REVIEW: *Philosophy of Mathematics Web Sites*

Rob Bradley

During my brief tenure as web reviewer for the Bulletin, my pieces have always concerned history of mathematics websites. I believe the same is true of my illustrious predecessor, Glen van Brummelen. For this issue, I thought I would consider the other discipline to which our society is dedicated, the philosophy of mathematics.

Whereas the selection of history of mathematics sites on the world wide web is fairly rich, philosophy of mathematics websites are decidedly rarer birds. This disparity is almost certainly explained by a difference in both the appeal and the accessibility of the two disciplines.

Most practicing mathematicians profess an interest in the history of their subject, even if that interest is only pursued through secondary and popular sources. Furthermore, history of mathematics seems to enjoy a degree of popularity among non-mathematicians, and is generally considered to be a fruitful area for student papers and projects, from elementary school through university. Although internalist history of higher mathematics demands substantial technical sophistication of the reader, the history of elementary mathematics is accessible to a broad spectrum of society. Furthermore, externalist history of mathematics broadens the appeal of the subject even further, capturing the interest of practicing social scientists and even broader populations based on ethnic, cultural or demographic associations.

The philosophy of mathematics maintains a much greater distance from the mainstream of society. No doubt philosophy in general has a smaller impact on the public imagination than does history, but the specifics of philosophy of mathematics impose demanding prerequisites before one can frame, much less appreciate, even the most basic epistemological issues of the subject. Amateur practitioners are few, and the academics are more likely to concentrate on traditional journals than on building websites.

websites. With a smaller audience, and a smaller store of content providers, the on-line presence of philosophy of mathematics will inevitably be smaller.

Go to your favorite search engine and search on "philosophy of mathematics". You will probably find biographies (e.g. Frege, Russell and Whitehead) and a good amount of material on formal logic, but very little devoted to areas that couldn't equally well be described as mathematics, history of mathematics or biography. Nevertheless, there are some interesting sites around, of which I'll briefly review a few.

plato.stanford.edu The Stanford Encyclopedia of Philosophy, edited by Edward N. Zalta.
This is a scholarly and well-structured site, with mirrors in Australia and the Netherlands. Authors of individual entries are identified, and each entry includes a detailed bibliography. There are also hyperlinks to related topics within the encyclopedia As such, it makes a good starting point for deeper research. Specific entries include plato.stanford.edu/entries/mathematics-constructive/ - Constructive Mathematics plato.stanford.edu/entries/mathematics-inconsistent/ - Inconsistent Mathematics plato.stanford.edu/entries/mathphil-indis/ - Indispensability Arguments in the Philosophy of Mathematics

www.umanitoba.ca/pm/ The Philosophia Mathematica Home Page
This is the home page for Philosophia Mathematica, one of the two official journals of the CSHPM. Many members will already be familiar with the print version of the journal, which is available to members at a reduced subscription rate. The web site contains listing of the contents for Series III (beginning in 1993), as well as an alphabetical index of authors, and abstracts from 1996 to the present. There are also instructions for submission, a listing of the editorial board, and similar technical information.

Annual Meeting/Réunion Annuelle

The Canadian Society for History and Philosophy of Mathematics/
Société canadienne d'histoire et de philosophie des mathématiques

Laval University, May 25-27, 2001

FRIDAY, MAY 25, 2001

General Session I/Session Générale I
Adrien-Pouliot (A-P) room 2501

9:00   **Jacques Lefebvre**, UQAM
Mathematical-like Deduction, Political Science, and Law in Hobbes's Work

9:30   **Madeline Muntersbjorn**, University of Toledo
Algebraic Representation and Rectification in the 17th Century

10:00   Coffee Break/café

10:30   **Roger Godard**, Royal Military College
Reichenbach, the Diagrammatic Approach in the Theory of Probability and Logic

11:00   **Alexei Volkov**, Concordia University, Montreal
On the Contents and History of One Vietnamese Mathematical Treatise

11:30   **Duncan J. Melville**,
St. Lawrence University
The Earliest Word Problems

12:00   **SCHPM/CSHPM Executive Council Meeting**

General Session II/Session Générale II
A-P 2501

2:30   **Gregory H. Moore**, McMaster University
Paper Tigers and Cholera Bacilli: A 19th-Century Italian Debate on Infinitesimals

3:00   **Michael Kinyon**, Indiana University South Bend
The Early History of Quasigroup/Loop Theory

3:30   Coffee Break

4:00   **Don Fallis**, University of Arizona
Clarifying the Epistemic Objectives of Mathematicians

4:30   **Wayne Myrvold**, University of Western Ontario
Two Models of Computation on the Reals

SATURDAY, MAY 26
Special Session on French Mathematics I/Session Spéciale I
A-P 2501

10:00   **J. J. Tattersall**, Providence Colege
Mathematics and Nyctaginaceous Shrubs

10:30   **Thomas Drucker**, Pennsylvania State University—Harrisburg
Descartes to Port-Royal: French Logic in the Seventeenth Century

11:00   **Louis Charbonneau**, UQAM
Toward an Unified Algebra in the Middle of the 17th Century

12:00   **SCHPM/CSHPM Annual General Meeting**

General Session III/Session Générale III
A-P 2501

2:00 **Patricia R. Allaire,** Queensborough Community College, CUNY (presenter), **Robert E. Bradley**, Adelphi University
D. F. Gregory's Quest for an Algebraic Foundation of the Calculus

2:30 **Francine F. Abeles,** Kean University
Warren Weaver on the C. L. Dodgson Nachlass

3:00 **Patti W. Hunter,** Westmont College
Statistics in the States Comes of Age: A Case Study in U. S. Influence Abroad

3:30 Coffee Break/café

4:00 **Erwin Kreyszig,** Carleton University
Surfaces and Manifolds: Their General Impact

4:30 **Peter Griffiths,** Independent Scholar
John Machin in 1706 Was the First to Recognise That the Analogy Between the Product of Complex Numbers and the Sum of Arcotangents Could Enable Pi to be Valued to a High Number of Decimal Places

6:00 HSSFC Reception

Sunday, May 27

Special Session on French Mathematics II/Session Spéciale II
A-P 2501

9:00 **Jean Dhombres**
The Applied Mathematics *Origins of Lesbesgue Integration Theory and Why It Was Read as* Pure Mathematics *During the First Years of the 20th Century*

10:00 Coffee Break/café

10:30 **Amy E. Shell,** United States Military Academy
The Olivier String Models at the United States Military Academy

11:00 **Robert E. Bradley,** Adelphi University
The Origins of Linear Operator Theory in the Work of François-Joseph Servois

11:30 **Ed Cohen,** University of Ottawa
The French Revolutionary Calendar

12:00 Lunch Break

General Session IV/Session Générale IV
A-P 2501

2:00 **Steven N. Shore,** Indiana University South Bend
Macrocosmos/Microcosmos: Celestial Mechanics and Quantum Theory

2:30 **Glen Van Brummelen,** Bennington College
The .Birth of an Independent Trigonometry: Revolution and Conflict in Tenth-Century Islamic Spherical Astronomy

3:00 **Craig Fraser,** University of Toronto
William Rowan Hamilton's Conception of Mechanics: A Preliminary Report

3:30 **Rebecca Adams,** Vanguard Univesity.
Early Metrization Theorems

Our annual general meeting this year will be held at Université Laval in Québec City in conjunction with the 2001 Congress of the Social Sciences and Humanities. Québec City has its main attractions distributed between the upper and lower portions of Old Québec. Upper Town spreads along the St. Lawrence from the old city wall to the Plains of Abraham which includes the magnificent Citadelle.

Lower Town is connected to Haute-Ville (Upper Town) by funicular or by several windy streets and stairs and contains the Musée de la Civilisation.

More information about the congress and abstracts for all speakers can be found on the CSHPM/SCHPM web site at <www.cshpm.org>

Treasurer's Report

Robert Thomas

The Society had a better financial year than it might have owing to the generosity of the institutions on which it freeloaded. The former Secretary/Treasurer had predicted a deficit for 1999, and we have now achieved that all too attainable goal but only by profligate spending. But see below for the future.

Financial Statement for 2000

	Credit		Debit
SSHRC travel grant	3480.00	SSHRC travel	3514.77
Previously unexpended SSHRC	34.77	publications	1682.06
dues/subscriptions	12053.01	HSSFC dues	1941.00
interest	149.66	Historia Mathematica	4518.45
PayPal bonus	59.41	Philosophia Mathematica	2252.02
		BSHM (1999-2000)	731.93
		CSHPS / SCHPS	135.00
		2000 conference	578.36
		administration	1390.11
		(unrealized) loss on foreigh exchange	35.91
Totals	**15776.85**		**16779.61**

Deficit   **1002.76**

carried forward from 1999   9933.09 (actual C$7134.02 + US$1883.88)
year-end balance   8930.33 (actual C$5459.33 + US$2337.06)

In 2000 the K. O. May Fund was valued at $2722.39.

Notes

SSHRC travel grants had an accumulated surplus (i.e., a debt to be paid off) of $34.77. This was eliminated in 2000.

Foreign exchange is an item that makes the balance work out properly in spite of the fact that many of the figures are artificial in that they are reported in C$ whereas they were actually a mixture of the two currencies. The Society maintains bank accounts in both currencies and I have balanced the two separate accounts separately (see separate accounting). The conversion rate I have used (1.4852) is the Canadian tax authority's 2000 average (except for the 1999 carry-forward for which I have left the rate used in the previous report, 1.4858). Conversion is purely notional, as the Society has not converted any of its own funds for years.

Administration (formerly miscellaneous) may be thought high. It includes the one-time charge of $1156.62 for clerical services now again performed by the Secretary. One easily notes that this amount is larger than the deficit.

The rest of the Treasurer's Report

There appear to be two matters that need to be addressed.

Dues

We have been predicting deficits for years and have avoided them until now because, as I said above, of the generosity of some institutions, most notably Providence College, but also including Long Island University, who charges very little for printing the Bulletin and doesn't charge for envelopes and auxiliary printing. Ignoring in-out items, we can expect a normal year to look more like this than the above:

Financial Statement for 2001

	Credit		Debit
dues/subscriptions	4400	publications	4000
interest	100	HSSFC dues	2000
		conference	1000
		administration	300
		loss on foreign exchange (unrealized)	50
Totals	**4500**		**7350**

To pay our way, we need rather more money than we have been taking in. The obvious way to do this is to raise dues by $15 Cdn ($10 US). This does not make the Society a large expense, but it might lose us some members, especially if it made it no longer advantageous to buy HM through the Society even if one had no other interest in it. The only other way that I can suggest to balance our income and expenditures would be to raise the fees less and make the proceedings optional. Their printing is done on a sufficiently small-scale basis that reducing the print run would not significantly increase the unit cost; there would be no disadvantage to those wanting the proceedings and an obvious advantage to those not wanting them. The Executive Council will presumably bring a proposal to the AGM.

K. O. May Fund

I have arranged that this fund, being rolled over at less than optimal rates by the bank that has been sitting on it for years, will be paid to the Society when the latest GIC becomes due in January of 2002. We should decide what to do with it, even if that is only to reinvest it. If we are interested in building it up, we could put some of our accumulated surplus into it.

Respectfully submitted, Robert Thomas, Treasurer   (more **Treasurers. Report** p. 13)

Origin of the Society's Logo (as reported by Robert Thomas, Treasurer)

The treasurer's journal office is the current repository of the Society's non-archives. Perusal of these files led me to the following account of the origin of the logo (see page 1 of Bulletin), which was essentially as I had remembered it. At the annual meeting in 1976, held at Université Laval, Charles V. Jones, the first president and then secretary, reported in the minutes that he had 'presented the new Society letterhead' he had designed. He stated that the illustration (suggested by Prof. Stillman Drake) was from Cavalieri's Geometria Indivisibilibus Continuorum.. "It was chosen because of the significance of the methodology of Cavalieri, for both the history and the philosophy of mathematics, i.e. the breaking away from the method of exhaustion and the ushering in of indefinite processes. ('Mystification' was the only audible response.)" In the typescript of his orally presented report, Jones mentions writing to Prof. Drake on May 28, 1976 "thanking him for his suggestion".

It is amusing that this is coming up again 25 years later in Laval. See President's report for more info.

CSHPM President's Report

Logo, No Logo?

Naomi Klein, the Canadian guru of the anti-globalization movement, calls her manifesto against corporate branding of our lives *No Logo*. Corporations make their logos as visible as possible because they know that it is the image that the public will associate with them. While we haven't been shy about the use of the CSHPM's logo, I don't think Klein would be particularly offended by it; we have no global pretensions. She might, however, be a little puzzled. When I was Secretary-Treasurer, I regularly used to get questions about the strange pair of shapes enclosed by horizontal lines that "graces" the covers of our publications, our correspondence, and our web site.

For the record, the image is an illustration from the *Geometria indivisibilibus continuorum*, a 1635 treatise by Bonaventura Cavalieri, demonstrating the principle that two solid regions sharing equal area cross-sections at every height must have the same volume. It is one of the steps on the road to the integral calculus, and a genuinely important work. Robert Thomas tells me that the logo was originally chosen to appear on Society correspondence in 1976 by Charles V. Jones, on the suggestion of Stillman Drake; the minutes record that "'mystification' was the only audible response". The bemused reaction continues to today; Council members have variously described the pair of shapes as "ghosts", "slugs", and "Ku Klux Klan uniforms". One Council member refuses to use it, calling it an embarrassment.

Trivial though it may seem, the logo is an important tool for (or hindrance to) recruitment. The Council has decided to ask the membership for suggestions for new logos, some of which will be displayed or discussed at the Annual General Meeting in Québec City at the end of May. We won't come to a decision then, but we hope to receive your input. We hope that the new logo will represent the Society's aims and values (which are stated on our web site, www.cshpm.org). If you want to contribute to the discussion but won't be attending our meeting, a page is being established at our web site, where you can view the proposed redesigns.

Dues Increases; The Proceedings Online

All good things... We have been beneficiaries of several organizations for some years now, but some of these arrangements are ending. SSHRC once provided an administrative grant in addition to our travel grants; various institutions, including The King's University College, once provided clerical and administrative support; and, most notably, Providence College paid for the production of, and occasionally even the mailing of, our annual *Proceedings*. All of these sources are now gone, and our ability to stave off a dues increase during the course of an economically challenging decade seems to be ending. Elsewhere in this *Bulletin* you will find a request from our Treasurer for a dues increase.

Once "in-out" items are taken out of our budget, by far our greatest expense is the production and distribution of the *Proceedings* of the annual meeting. It's a valuable means of disseminating to the membership the scholarly activities of its members, and as a contributor and editorial assistant to the first-ever volume in 1988, I have a particular attachment to it. However, the prevalence of the Internet raises a possibility to reduce greatly the anticipated dues increase. We will be publishing the *Proceedings* online this year, using password protection to allow only members to view it, thus preserving its status as a document internal to the Society. In addition, we will send out paper copies to those members who request one. We hope that this will achieve a substantial cost savings without decreasing access to the papers; we are considering this year as an experiment, to determine how well the idea works. If successful, we might reduce

the annual dues increase from over 50% down to about $5.

Proceedings in Print

Having moved the *Proceedings* from the print medium to the Internet, it seems the right time to describe another project to move it more substantially into print. Michael Kinyon (current *Proceedings* editor), Tom Archibald (past CSHPM president) and I are working to produce a published volume of some of the papers that have appeared in *Proceedings* of the recent past. We feel that a great many studies of extraordinary value to the scholarly and educational communities are languishing in the *Proceedings*, and should be made available to a wider audience. We will be selecting papers this summer and fall.

I should emphasize that this volume, should it come to pass, will *not* be a "best-of". A number of papers in the *Proceedings* have already appeared elsewhere; also, the publisher with whom we are working will be looking for certain kinds of articles with a uniform coverage of the chronological and cultural territory. Also, we are hoping to market the book as a supplement to upper-level undergraduate and graduate courses in the history of mathematics, as an introduction to scholarly work in the field. The great success of some of our recent meetings, including two joint meetings with the British Society for History of Mathematics and the Canadian Mathematical Society, make this a good time for this project.

If you have had a paper appear in the *Proceedings* that you think would make for a good contribution to this volume, please let me or one of the other co-editors know. The most unpleasant part of this task will be the selection of papers, inevitably having to include some and exclude others; if you can help us make that choice, we will be grateful. We promise to do our best to make this volume the best public statement to the scholarly community of the CSHPM's values and high standards.

Glen Van Brummelen

The following have recently joined the Society. We look forward your contributions.. A warm welcome to all.

Freda Bennett, Department of Mathematics, Massachusetts College of Liberal Arts, North Adams, MA 01247-4100, USA, fbennett@mcla.mass.edu

John Glaus, 666 Kennebec St., Rumford, ME 04276, USA, restinn@exploremaine.com

Chris Gubby, 201 Albion Rd., Sutton, Surrey W1H 3PF, U.K

Prof. Virginia Ann Hanning, 5702 Berry Creek Dr., Houston, TX 77017-6804, USA, vhanning@hotmail.com

A.A. Kirfoot, 3, Acorn Grove, Westfield, Woking, Surrey GU22 9PB, U.K, may.worthington@ntlwirld.com

B.P. Lee, Cilcain , Nebo,, Llanrwst, Gwynedd LL26 0SY, U.K.

Denice Preston, 2 Manor Farm Mews, Tidmarsh, Nr. Pangbourne, Berks RG8 8EY, U.K., denice@tidmarsh4.freeser4ve.co.uk

James Rauff, Dept. of Mathematics, Millikin University, 1184 W. Main, Decatur, IL 62522, USA, jrauff@mail.miliken.edu

Ed Sandifer, 3 Juniper Rd. Newtown, CT 06470, USA, Sandifer@WCSUB.CTSTATEU.EDU

Dr. Joanne R. Snow, 10576 Red Pine Dr., Granger, IN 46530, USA, jsnow@saintmarys.edu

Leon Wilmanski, 28 Hill St., Alloa, Scotland FK10 2BG, U.K.

Kai-Choi Wong, Flat F, 33/F Block 5, Flora Plaza, 88 Pak Wo Road, Fanling, Hong Kong, China, ha1997@hkstar.com.hk

AMS Eastern Sectional Meeting

The American Mathematical Society's 966th meeting took place the weekend of the 28th and 29th of April at Stevens Institute of Technology in Hoboken. Some of those in attendance must have looked many times at the campus from the other side of the Hudson River but had not recognized that there was a university in sight. The weather for the day of the meeting which included the sessions on the history of mathematics offered some dazzling vistas of the south end of Manhattan.

Some of the speakers gathered at the building where registration was held and proceeded downhill with the organizers of the conference (**Rob Bradley** of Adelphi University and **Pat Allaire** of Queensborough Community College). It was just as well that we were sticking together, as the most obvious candidate for an unlocked door in the building where the session was scheduled proved to be a disappointment. Fortunately, we were able to make our way inside without having to attract the attention of campus security, although the interior did seem to be somewhat short of identifying marks for rooms.

The first speaker of the morning was **Peter L. Griffiths**, celebrating his first visit to the United States with a talk about the Gaussian solution to 2cos(360/17). It was hard to believe, after his many trips to Canada for meetings of the CSHPM, that he had not previously been south of the border. He argued that the calculation was not critical for the construction of the heptadecagon for which Gauss was famous.

By way of a change, the second talk in the session was much closer to philosophy. **Steven J. Gimbel**, who has joined the philosophy department at Gettysburg College, addressed the issue of whether Poincarés philosophy of geometry was closer to intuitionism or formalism. He demonstrated its independence of both, and some of his points could well be applied to consideration of where Wittgenstein belongs on the same philosophical spectrum.

The third talk found the session firmly back on the historical side, as **Andrew Perry** of Springfield College took up the origins of Banach space theory. He paid tribute to some of the aspects of Banach's life that were celebrated in Kaluza's biography and showed pictures of scenes like the Scottish Cafe. We also learned some of the details of what happened to the goose that Per Enflo had won for solving one of the problems raised in that distant, prewar environment.

The fourth talk was given by **Fran Abeles** of Kean College of New Jersey. She marked her return to her alma mater by looking at Warren Weaver's editing of some manuscripts of Charles Dodgson to which he had managed to gain access. As can be imagined, her remarks also provided some background about the manuscripts themselves and how they fit into the rest of Dodgson's published work.

The final talk of the morning was given by **Amy Shell** of the United States Military Academy. Both she and Fran had also been at the previous weekend's meeting in Las Vegas, so they would have had an excuse for some fatigue. Amy was battling mononucleosis among other ailments, but somehow managed to deliver (and even audibly) an instalment in her chronicle of the career of Mina Rees. If she can give a talk so well when she is under the weather, we can only look forward to once she has shaken off the current bout of disease.

After some negotiation the group ended up at a Thai restaurant for lunch. The food was reasonable, but they were obviously not up to dealing with quite so large a crowd at one time. Still, there were few complaints about anyone's being underfed and the combination of diners managed successfully to divide up the bill into the appropriate number of pieces. (In view of Peter Griffiths' talk, perhaps seventeen diners

would have been the optimal number for a challenge.)

The first talk of the afternoon was delivered by **Glen van Brummelen**, faculty member at Bennington College and president of the CSHPM. He had also made the trek out to Las Vegas but did not want to disappoint his New Jersey fans and so obliged with an account of the birth of trigonometry as an independent science. It is not everyone who can bring a breath of life to tenth-century Islamic spherical trigonometry. Then again Glen was able by a survey of those present to demonstrate that spherical trigonometry had passed out of the purview of most mathematicians these days. Perhaps we are all learning hyperbolic trigonometry instead.

Then **Rob Bradley** changed hats from that of organizer to speaker, as he reminded the audience of François-Joseph Servois. His life was interesting enough, but Rob was concerned with pointing out the extent to which Servois's work anticipated some of the developments of what one thinks of as 'soft' analysis through the next couple of centuries. He pointed out the number of aspects in which Servois had come up with notions that were usually attributed to others in the chronicle of abstract algebra.

The next-to-last speaker of the afternoon was **Ed Sandifer**, not surprisingly on the subject of Euler. He took advantage of the opportunity to plug the gathering on Euler planned for next summer and among his advertisements was his talk, looking at several versions of the Euler-Fermat theorem. By the time of the Euler tercentenary in 2007, we may be referring to the Euler-Pythagoras Theorem in terms of the universality of Euler's influence.

The remarks of the last speaker of the afternoon (**Thomas Drucker** of Penn State--Harrisburg) dealt with the reputation of the Histoire des mathématiques of Montucla from the eighteenth century. More details can be found elsewhere in this issue, partly to avoid stretching this article out to any greater length, partly for the sake of those who had to leave early and who shall here remain nameless out of deference to mononucleosis. The session came to a punctual end without Pat Allaire's having had to threaten to asphyxiate any of the speakers.

The session was useful in several respects, as it gave the organizers and the speakers the chance to publicize various other gatherings in the history of mathematics scheduled for the next year. The turnout for the talks was always in double digits, although the remoteness of the room may have led to some faint hearts' abandonment of the quest for refreshment at the fountain of Clio. Pat Allaire and Rob Bradley are to be thanked for the work of putting the program together and for making the lives of the speakers so easy.

Technology Advance for Pohle Series

Pat Allaire and Rob Bradley recently announced that Karen Parshall's talk, "Entering the International Arena: The Impact of Hilbert's Grundlagen der Geometrie on the American Mathematical Community," which was delivered May 2nd as part of the Fredercik V. Pohle Colloquium Series on the History of Mathematics, is now available as video on demand at the Pohle Colloquium Website.

Browse over to: http://www.pohlecolloquium.org. You will find, immediately under the title of the talk, an entry headed "Video Stream".You will need Real Player to view the video stream. If this is not already loaded on your computer, you can download it from: http://www.real.com. The free version of RealPlayer, which is all you need to view the video, can be found by clicking on the link marked "RealPlayer 8 Basic".

Pat and Rob want to thank Adelphi's Office of Information Technology for taping the event and making it available on the web. They hope to be able to provide archived video of all future Pohle talks, and to include live streaming and on-line chats in the future.

Separate 2000 Currency Financial Statements

Canadian		U.S.	
Income		**Income**	
SSHRC	3480.00	SSHRC (from Canadian)	1642.34
Dues/subscriptions	3574.00	Dues/subscriptions	5709.00
Interest	149.66	PayPal bonus	40.00
Total	7203.66	Total	7391.34
Expenditure		**Expenditure**	
SSHRC travel	3514.77	SSHRC travel	1642.34
HSSFC dues	1941.00	Publications (inc. Web)	1132.55
Philosophia Mathematica	648.00	Historia Mathematica	3042.32
BSHM (49/46)	731.93	Philosophia Mathematica	1080.00
CSHPS / SCHPS (1999; 37/10)	135.00	Administration	40.95
conference	578.36		
administration	1329.29		
Total	8878.35	Total	6938.16
Surplus (deficit)[5459.33 - 7134.02]	(1674.69)	Surplus (deficit) [2337.06 -1 883.88]	453.18

Note

The numbers in square brackets are bank balances rather than income and expenditure numbers, except that $5149.66 of the Canadian balance is GIC.

(Web Review cont. from p.3)

www.mcmaster.ca/russdocs/russell1.htm
The Bertrand Russell Archives
This McMaster University site contains a wealth of information concerning Bertrand Russell. There is an index of his Collected Works, and of the first 25 years of the Journal of Bertrand Russell studies, a wealth of high quality images, mostly photographs, a discussion list (Russell-l), a chronology of his life, and many links to other sites.

www.ios.org/pubs/F_phimat.asp Study Guide
The Philosophy of Mathematics,
by David Ross, Ph.D.
This web page is a part of the Objectivist Center's website, ios.org. The Objectivist Center is the Ayn Rand think tank, so there is a particular philosophical ax being ground at this website. Nevertheless, there is some merit in the site, and a detailed bibliography is once again provided.

Needless to say, works by Ayn Rand (Introduction to Objectivist Epistemology) and other Object-ivists are represented in the bibliography, but so are the books of Benacerraf & Putnam, Nagel & Newman, and Courant & Robbins which ought to be included in a general introduction such as this.

www.cs.washington.edu/homes/gjb/doc/philm ath.htm Greg Bardos' Class Notes
This site contains fairly complete class notes from an undergraduate course in the philosophy of mathematics, which the author took at Duke University from Professor Carl Posy in the Fall of 1992.

www.epistemelinks.com/Main/Topics.asp?To picCode=Math The epistemelinks.com
Philosophy of Mathematics Page. This is collection of links, allegedly to philosophy of mathematics pages. Many of the links actually point to history of mathematics pages.

Some Historiographic Issues
Thomas Drucker

This is a brief outline of my talk at the American Mathematical Society in Hoboken in April. Since it takes up some historiographic issues, it may be of more general interest even in its inchoate state. More details will be available in a subsequent version. It arose out of my concern over the relative intellectual standing of philosophy of mathematics and history of mathematics in the intellectual community at present. If many of the statements are scarcely true without qualification, they can always serve the purpose of encouraging discussion.

Tom Stoppard's new play The Invention of Love takes up the life of A.E. Housman, the classical scholar and poet. Housman seemed at times almost to keep his own poetic personality under wraps and to prefer to offer himself to the world as classical scholar. Stoppard suggests that this may have been due to Housman's conviction that classical scholarship was underrated by the world at large. Since classical scholarship had been one of the great areas of achievement in the Renaissance, one can argue that Housman was unlucky in the hour of his birth.

In the same way, those historians of mathematics who express concern about the current state of the discipline can look back at the historiographic tradition for some reassurance. In earlier periods the history of mathematics has had somewhat more recognition than it garners at present. This may furnish grounds for hope, although at the very least it may serve as an excuse for wondering what has led to the changes in the discipline's standing.

There is something resembling history of mathematics in Plato, but Aristotle deserves recognition for his priority in examining the history of mathematical ideas. Aristotle was concerned with mathematical ideas of his predecessors as they contributed to the picture he was trying to draw of the intellectual world.

This approach to the history of mathematics has not lost all its advocates even today. In the mediaeval period much of mathematics was being carried on sub specie aeternitatis, which does not lend itself particularly to concern for the history of the discipline.

With the arrival of Francis Bacon on the scene, a new approach to the presentation of intellectual disciplines like the sciences can be discerned. Now the foundations of an area can only be recognized once the ideas have been classified and put into some sort of rational order. There were a few historians in the seventeenth and eighteenth century who may have put together Baconian inductive histories of mathematics, but they did not contribute much by way of synthesis.

The outstanding historian of mathematics of the eighteenth century was Jean Etienne Montucla (born in Lyons in 1725). He was both mathematician and historian of mathematics, which won out over the charms of legal studies in his preparation for life. He produced the first edition of his Histoire des Mathématiques in two volumes in 1758, in which he carried the story up through the seventeenth century. Later in life he came back to the task of carrying it further through the eighteenth century, although he died before it could be finished. The material on his own times was completed after his death in 1799 by Lalande.

Montucla had been a part of the circle of d'Alembert and Diderot, and this was no accident. Those who were working on the Encyclopédie were eager to throw off the shackles of the past, and mathematics seemed in many ways an ideal discipline for their purposes. Mathematics had a history but its history did not bind its future in any way. The study of mathematics was open to all, who could take their turn in the list of contributors to the development of the subject.

Personals

The second edition of **Antonella Cupillari's** text, *The Nuts and Bolts of Proofs* was recently issued. The publisher anticipates the same success as with the earlier edition published in 1989. This book leads readers through a progressive explanation of what mathematical proofs are, why they are important, and how they work, along with a presentation of basic techniques used to construct proofs. It has been a very popular undergraduate text.

Antonella is currently associate professor of mathematics at Pennsylvania State Erie, the Behrend College. She is now studying the life and some of the mathematical work of Maria Gaetana Agnesi.

Life in Vermont at Bennington College seems to agree with **Glen Van Brummelen**, President of our Society. Since his arrival there he has had a plethora of publications, many coauthored by our Vice President **Len Berggren**. Len and Glen work well together even when they are separated by a country and 3000 miles, as evidenced by the health of our Society and the following impressive list.

with **J. L. Berggren**, Abu Sahl al-Kuhi on the Distance to the Shooting Stars, to appear in *Journal for the History of Astronomy*.
Mathematics and Religious Belief in Pre-Modern Cultures, *Mathematics in a Post-modern Age: A Christian Perspective*, eds. Russ Howell and James Bradley, Eerdmans, to appear.
with **J. L. Berggren**, The Role and Development of Geometric Analysis and Synthesis in Ancient Greece and Medieval Islam, *Ancient and Medieval Traditions in the Exact Sciences: Essays in Memory of Wilbur Knorr*, eds. Patrick Suppes, Julius Moravcsik, and Henry Mendell, CSLI Publications (2000), 1-31.
with **J. L. Berggren**, Abu Sahl al-Kuhi on Rising Times, *SCIAMVS* to appear.

with **J. L. Berggren**, Abu Sahl al-Kuhi on Drawing Two Lines from a Point with a Known Angle, *Suhayl*, to appear.
with **J. L. Berggren**, Abu Sahl al-Kuhi's "On the Ratio of the Segments of a Single Line that Falls on Three Lines", *Suhayl* 1 (2000), 11-56.
Teachers, Learners, and the World Wide Web, *History in Mathematics Education: The ICMI Study*, eds. John Fauvel and Jan van Maanen, Dordrecht: Kluwer, 2000; to appear.
with **J. L. Berggren**, Abu Sahl al-Kuhi on "Two Geometrical Questions", *Zeitschrift fur Geschichte der Arabisch-Islamischen Wissenschaften* 13 (2000), 165-187.

In addition, the second edition of *Seeing is Believing: A Visual Lab Manual*, with Mike Caraco, which involves historical episodes and context-rich applications will appear in summer 2001, as Glen says, "whether it's ready or not." This was originally published as the second half of *Calculus Using Graphing Calculators* (co-author Joe May), Philadelphia: Saunders College Publishing, 1996.

Historiogaphic Issues (cont. from p.10)

The success of Montucla's Histoire (which remained in print for much of the twentieth century) was due partly to his own training in technical matters as well as his literary skill. The timeliness of the subject, however, made it fashionable in the France in which he lived and that served as the intellectual salon for the world. As historians of mathematics wonder ruefully how many of their works are likely to have the length of life that Montucla's did, perhaps it is worth asking how far the spirit of mathematics and its history is in accord with general cultural trends so much as in the era of the Encyclopédie. We can trim our historical sails to fit the prevailing winds of culture. Luck comes when mathematics is already pointing the right direction.

Tom Drucker, besides currently coediting this Bulletin, teaches at Penn State, Harrisburg.

Report on HSSFC Annual General Meeting

Edward Cohen has graciously volunteered to be our representitive to HSSFC (Humanities and Social Science Federation of Canada) because he lives in Ottawa and can conveniently attend their meetings. Following is a brief report of the Annual General Meeting held on Nov. 25 and 26. An expanded report will be presented to the membership at the Laval meeting. We thank Ed for his efforts, especially since the Nov. 26 meeting started at 8:00 am in the midst of an ice storm.

Ed reported that the main item of interest to our society is that HSSFC voted to raise the per capita fee to member societies from $7.00 to $10.00 for societies of less than 225 members. Larger societies will pay only $8.00 per member. Hopefully we fall into the second category.

SSHRC (Social Science and Humanities Research Council of Canada), the research arm of HSSFC , complained that their allocations from Parliament are not consistent and are less than those awarded to the Sciences. This affects travel allocations to the various member societies.

It was announced that the 2002 meeting of the HSSFC Congress is to be at Dalhousie University in Halifax, NS; and the 2003 meeting is to be at the University of Manitoba in Winnipeg, MB.

Willard Van Orman Quine

Willard Van Orman Quine died on Christmas Day 2000. He was born on 25 June 1908, received his undergraduate degree from Oberlin, and did his doctoral work at Harvard. Through a long and fruitful academic career he became one of the most influential philosophers of the second half of the twentieth century. He is associated with the analytical philosophy of language, but his work carried over into areas like philosophy of science and philosophy of mathematics as well. In particular, he is often associated with the indispensability argument for the existence of mathematical objects. In the area of logic he wrote a much-used textbook (Mathematical Logic) and was president of the Association for Symbolic Logic. Although an inconsistency was discovered in the system given in his paper 'New Foundations for Mathematical Logic', the ideas contained therein have been elaborated by others and continue to have an influence in logic.

Quine was a sharp critic of the use of abstract terms in philosophy, and suggested circumlocutions to eliminate the apparent reference to abstract objects. The practice is called Pegasizing, from a particular instance, but Douglas Hofstadter pays tribute to the idea's inventor in his book Gödel, Escher, Bach. As Hofstadter refers to the practice, it is 'to quine a phrase'. One likes to think that this sort of homage would have meant all the more to Quine in view of his own verbal perpetrations.

John Fauvel

(Fuller tribute to appear nest issue)

John Fauvel died at 6.20pm in the evening of Saturday May 12th in a good friend's family house in Leamington Spa. It was a glorious summer day, a true celebration of his too short life; he was only 54. He was loved, befriended, respected, and admired by people all over the world.

He died quickly of a disfunctional liver and kidney, arising from a condition he has had for the last 10 years and perhaps more. He had recently been put on the list for a liver transplant, but his own deteriorated more quickly than anticipated, with a kidney failure that made the operation impossible.

He will be remembered with joy by all who knew him..   David Fowler

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Reminder; there will be special sessions on the History of Mathematics, organized by society members, at the first joint international meeting of the AMS and the Société Mathématique de France in Lyon, France, on July 20 -21, and at the Eastern Sectional Meeting in Williamstown, MA Oct. 13 - 21. For more information check the AMS website: www.ams.org.

State of the Issue and Issues of State (i.e. Call for contributions)

This issue of the Bulletin raises many issues of importance for the future of the Canadian Society for the History and Philosophy of Mathematics. As an organization we have been able to benefit from the generous support of institutions and individuals upon which we cannot count for the future. As a result, the question of the magnitude of dues increase is one that the members will have to resolve at Laval. The question is inextricably linked with that of what members want out of the Society. The members of the Council of the Society have been giving much thought to various ways of providing the members with services, so it will be appropriate for the members of the Society at large to express their attachment to those services.

What is a little more discouraging is that there is not much in this Bulletin other than administrative reports and brief summaries of conferences. There is no doubt that the fall issue was one particularly rich in variety of contributions. This spring, however, contributors of articles of interest were much scarcer, and even brief accounts of how members became interested in the history of mathematics were thin on the ground. The editor of the Bulletin who already spends an immense amount of time in producing it can scarcely be asked to write the material as well. If it is not the editors who do the writing, however, then it has to be the members.

The Bulletin exists partly to serve as the journal of record for the Society. In that role it can continue to include the reports of officers (and some of them make much more interesting reading than one might have expected). It would be attractive, however, to have other contributions to the history of mathematics, especially those that are not suited for publication elsewhere. Thanks are due to past and present contributors for making the Bulletin a lively reflection of the state of the discipline. Further efforts in the same direction will continue to bear witness to the number of paths that members of the Society are taking in pursuit of the form of enlightenment that the history of mathematics affords.

It should be noted that contributions for the November Bulletin are welcome at any time prior to early October. Send us your contributions while they are fresh in your mind. Write ups of pertinent conferences, personals related to your achievements and short quotes of interest are all welcome, in addition to articles of the type mentioned above. We hope to hear from you throughout the summer. Send contributions to Tom Drucker or Sharon Kunoff at the addresses noted elsewhere in this bulletin.

The movie theatres will soon be playing host to a cinematic version of Sylvia Nasr's book A Beautiful Mind. In the book she looked at the career of the Nobel Laureate and game theorist John Nash. The movie will feature Russell Crowe in the role of Nash, and there is no evidence that Crowe will be sporting any of the costumes from his recent Academy Award winning performance in Gladiator. Nash has been quoted to the effect that he is confident that Crowe's repertoire can include playing mathematicians as well as gladiators. The film was shot at Princeton, so there should be at least a degree of visual authenticity.