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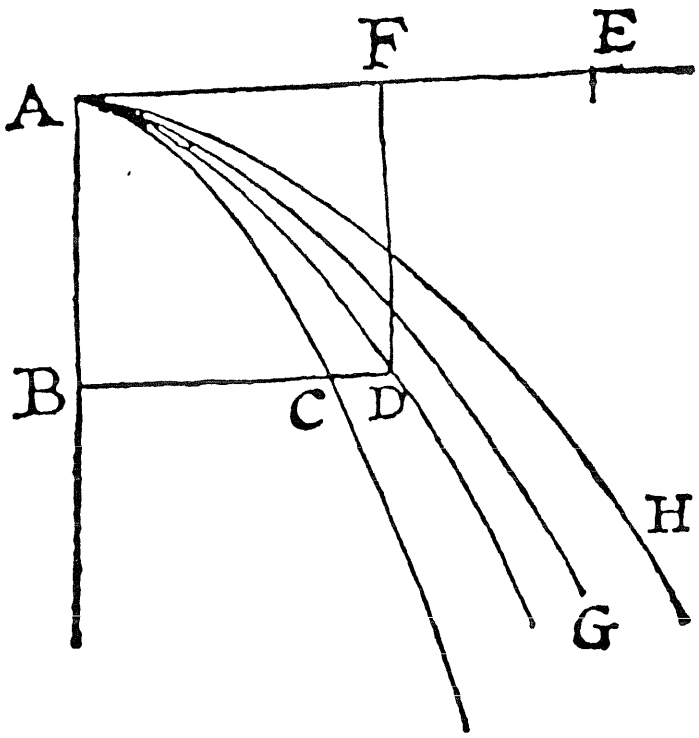
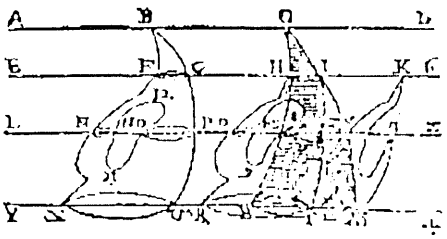


Charles Hayes argues for higher-order infinitesimals (1704)
(see back page)



Canadian Society for History
and Philosophy of Mathematics

Société canadienne d'histoire et
de philosophie des mathématiques

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A message from the President

Robert Thomas

The *Bulletin*'s Editor has mentioned to me from time to time over the last several months that I ought to write something here to the membership. I certainly agree, as there are several things that I want to say.

First, I am grateful to the membership for electing me president. No one ever gets too many pats on the head, and academic life at the present time is all too full of kicks in the shins; so a bit of positive reinforcement is most welcome. I'm sure that you all find these hotly contested elections as nerve-wracking as I do.

Having just been elected, the new Executive had no time to meet at Brock after the AGM (Annual General Meeting) this past May. This was a problem that I hope to remedy in St John's, where I'd like to have meetings of the Executive both before and after the AGM; this would be especially necessary if there were any change in personnel.

Since the Brock meeting, Tom Drucker has agreed to be programme chair again, and Roland Eddy has agreed to be local-arrangements person in St. John's. We are grateful to them. Arrangements are already being made for that meeting. This issue of the *Bulletin* contains (page 4) some information on a trip to Newfoundland (and on how to get more). I recommend your trying to see something of the island while you are there; it is a different place. I have not visited St. John's myself, but I have seen some of the west coast, and I can assure you that some of it is vastly different from anything I have seen elsewhere -- rather like the landscape of the moon, but more interesting than I imagine that to be. The fjords too are remarkable, because instead of being inlets of the sea they are lakes. The comparative remoteness from where most of us live ought to be seen as an advantage of the meeting rather than as a disadvantage.

I cannot yet announce the identity of the featured speaker because, while I have issued an invitation, I do not yet have an acceptance. This will be cured in publicity for the meeting which will appear in other places, like the *Notices* of the AMS.

Our joint meeting with the British Society for the History of Mathematics is now tentatively booked for the weekend of July 18-20 at Oriel College, Oxford. The total cost -- fee, food and accommodation -- has been estimated at between $300 (Cdn.) and $300 (U.S.). I hope that those who cannot get to St. John's will get to Oxford, and that a significant number of us will do both. A memorable year is in store for those who do.

The Executive was instructed by the AGM at Brock to consider how the Society can simplify its elections. We could elect fewer persons at each election by having staggered two-year terms and electing half of the Executive each year; or we could have fewer elections (which seemed to be the members' preference) by having non-staggered two-year terms or staggered

four-year terms. The Executive has been discussing those three options as possible replacements for the present scheme of having one-year terms for all offices. We shall present to the membership, at the AGM in St. John's, proposals for constitutional amendments in this and other areas. To help you think about these matters, we are enclosing a copy of the current constitution with this mailing of the *Bulletin*; please retain it in order to be able to consider revisions when they are proposed. Another change I'd like is a slightly less cumbersome name for the Executive Council; I think either "Executive" or "Council" would do just fine. We need to collect such ideas; don't be shy about sending them to me.

At Brock the matter of vetting abstracts of proposed papers for the AGM was sent to a committee, which (so far as I know) has not yet had any discussions.

Also at Brock, Liliane Beaulieu and I presented a plan to offer members of CSHPS/SCHPS (the Canadian Society for the History and Philosophy of Science) a special membership (excluding our *Proceedings*) for only $5 for 1997. We made the same recommendation to *their* AGM, and it was accepted in both places. Hence the affiliate membership will be available on your next renewal form. The theme for the St. John's meeting, "Mathematics and Science", was chosen with this co-operation in mind. We hope to have a joint session on this topic, arranged by the CSHPS/SCHPS programme chair Stuart Pierson (spierson@morgan.ucs.mun.ca).

In July I sent press releases to the editors of *MAA Focus* and the *Humanistic Mathematics Network Journal* in an effort to stimulate interest in the Society on the part of the huge number of mathematicians out there who do not yet belong. Keith Devlin published this release in its entirety in October, and I hope that Alvin White will do the same. Publicity focussed on saying something rather than just on trumpeting our existence is more effective (and more likely to be free); and when we have more arrangements in place for our two 1997 meetings we must get publicity for them (and for the Society) where we can.

I am happy to say that member subscriptions to *Philosophia Mathematica* have continued to increase this year. I hope that a lot of individual subscribers will induce their institutions to subscribe also, to make this journal available to a larger audience. This is perhaps the appropriate time to mention that member subscriptions are supposed to be paid for when membership fees are paid so that they will not be a burden on our long-suffering Secretary-Treasurer, who does a lot of work for the Society. If this work were all concentrated in December and January, it would make his job easier and cost members no more. I urge you to consider him in planning the renewal of your membership.

If there is anything to do with the Society that you want to voice a concern about, please be in touch with me (thomas@cc.umanitoba.ca; fax 204-275-0019). I look forward to serving you for the remainder of my term and to seeing many of you at St. John's or (non-exclusive) at Oxford.

"The Rock" and the 1997 Annual Meeting

Renaissance history dictated the venue for the Society's next Annual Meeting. In one of the seminal voyages of the great Age of Exploration, John Cabot's little caravel *Matthew*, out of Bristol with a crew of 18, came in 1497 to what seemed a New Founde Land. Thus next year is a 500th anniversary, and the Learned Societies meetings, at Memorial University in St. John's from May 31 to June 14, are part of the celebration. The CSHPM meeting is tentatively scheduled for June 6 to 8.

Members should be aware of a **significant change in procedures**. In the interest of saving trees and money, **registration information will be sent only to people who request it**. You can do so by phone (709-737-4360), by fax (709-737-4449), or by e-mail (learneds@morgan.ucs.mun.ca). The Learneds' Web site is at http://www.mun.ca/learneds/, and in particular the residence registration form is available at http://www.mun.ca/learneds/residence_form.html.

The attractions of "the Rock" (as Newfoundland is often called) are many and diverse. St. John's claims the oldest street in North America and is the site of Signal Hill, where in 1901 Marconi received the first transatlantic wireless transmission. Gros Morne National Park has been recognized by UNESCO as a World Heritage Site for its exceptional beauty and unique geological features. L'Anse aux Meadows, also a World Heritage site, is a reconstruction of a Viking settlement founded 500 years before John Cabot. At Port au Choix National Historic Site you get glimpses of three prehistoric aboriginal cultures. Canada's 10th province (it joined the rest as "recently" as 1949) offers among other things magnificent scenery, 300 bird species and an alleged 125,000 moose, excellent whale-watching ("the humpbacks of Notre Dame"), sea-kayaking, white-water rafting, diving and sailing. The island's contributions to the world's delights include some exceptionally attractive folk songs ("She's Like the Swallow", "All Around the Circle"), and some of the most endearing place names anywhere (Ha Ha Bay, Come By Chance, Witless Bay, Little Heart's Ease). Among the unhackneyed dining adventures are cod tongue, seal flipper and partridgeberry pie, which can be washed down with "screech", the notorious Newfoundland rum, or with the local blueberry wine.

To get tourist information about Newfoundland, phone 1-800-563-NFLD and you will be sent a comprehensive travel guide, a road map and a calendar of 500th-anniversary events. Or write to Department of Tourism, Culture and Recreation, P.O. Box 8730, St. John's, NF A1B 4K2 (Canada), or e-mail info@tourism.gov.nf.ca. You can explore the island online at http://www.gov.nf.ca.

See you on the Rock!

INTERNET "SITE OF THE SEMESTER"

The MAA math-history-list and its archive

Glen Van Brummelen

Imagine, if you will, a seminar room just down the hall from your office. In this magical room, you find that all your colleagues interested in the history of mathematics, not just from your university but from around the world, are there waiting to discuss almost any topic! In this mythical meeting-place there is always someone ready to track down an obscure paper you just can't find, provide information about a time period that you wouldn't find in any book, or discuss the finer points of 19th-century algebra for as long as you might be interested. In addition, all previous conversations that have occurred in this room are transcribed and collated, and are available in a filing cabinet for your convenience.

You've likely guessed by now that I'm referring to the math-history-list, a free service provided by the Mathematical Association of America and maintained by CSHPM member Fred Rickey. If you have an e-mail account, you can bring this amazing facility to your office in seconds, following the instructions below. You may miss the personal flavour of a face-to-face meeting, but the people, the conversations, and the filing cabinet are all there at your disposal. Over 400 subscribers discuss matters ranging from Napoleon's Theorem to Old Babylonian influences on Greek mathematics to rabbinical exegeses of Biblical passages referring to the value of pi (the latter discussion stemming from a paper given at the Society's 1991 meeting).

There are, of course, certain drawbacks to the medium. The Internet is truly democratic; anyone is free to subscribe to the service, and anyone can post virtually anything (until the moderator expels an offender). You can trust a response as far as you can trust a note scribbled to you by a friend in the hallway -- except, often, you don't know who the friend is. Occasional "flames" -- unkind posts designed to spread anger and insult -- make their appearance. Happily, the math-history-list has until now been largely unafflicted by these ailments, but no one can promise that peace and serenity will reign forever.

If you don't wish to subscribe, you can still access the "filing cabinet". The archives are available at the URL

http://forum.swarthmore.edu/epigone/math-history-list

They are searchable from any WWW browser (even LYNX), whether or not you subscribe to the list, and full searching capabilities are provided.

If you decide to subscribe, expect to receive between zero and five e-mail messages per day from the list. If your e-mail software has filtering capability, I strongly suggest that you set up

(See "Internet site", back page)

Euclid, temporal logic and constructive analysis

Bill Anglin

Mathematics has many foundations, some classical and some for more restricted, constructive versions of the subject. In his own day, Euclid was not just a geometer but a worker in foundations, and he provided a system which, with a bit of rigorisation, ought to be listed along with modern systems such as those of the intuitionists and, in particular, that of Bishop and Bridges. Since no one seems to have done this, I am doing it myself -- that is, I am developing a foundation for mathematics which is both true to the historical Euclid and also sufficiently rigorous to meet the demands of twentieth-century logic. The system is finitistic, and dynamic. Like Euclid, but unlike many constructivist systems, it makes use of the law of the excluded middle. Within this system one has versions of elementary geometry and arithmetic, trigonometry and analysis, and even enough algebra to convince Euclid, on his own terms, that there is no straight-edge-and-compass construction for trisecting angles. (Most proofs of this presuppose the whole, classical real number system, and might not be acceptable to Euclid himself -- he might take the view that classical mathematics is so powerful it probably contains a contradiction.)

Some of the details of my (as yet incomplete) project are as follows. In order to capture the temporal component of Euclid's system -- one thing being constructed after another, etc. -- I mix first-order predicate calculus with an integral-time temporal logic, carefully honed to ensure that objects can be added to, but not erased from, the domain of discourse. Then I add in a reworking of one of Tarski's axiomatisations of Euclid's geometry. I cannot use Tarski's actual axioms because they represent Euclid's system as timeless and Platonic -- which it was not. At this point the system is strong enough to do what one might call field arithmetic -- although it takes 35 pages to prove this. Then I add in three axioms for doing arithmetic, including a finitistic version of mathematical induction. This makes the system strong enough to capture arithmetic (suitably conceived). Next I prove the Axiom of Archimedes, and use it to develop a finite type of analytic geometry -- enough to use in the proof of the impossibility of trisecting the angle.

Concerning analysis, Euclid's system differs from that of Bishop and Bridges in that (1) the circle-area formula is not in the system, only arbitrarily good approximations to it; (2) a polynomial function such as $(1/4)x^2-2x+4$ does not have a minimum; and (3) there are discontinuous functions. (Of course, functions are not defined as infinite sets of ordered pairs! They are defined as finite straightedge-and-compass algorithms.) As is the case in the system of Bishop and Bridges, the Intermediate Value Theorem is true only 'within epsilon'.

Concerning algebra, there are some unusual phenomena. For example, you cannot simply say that a polynomial of degree n has n roots. Indeed, the polynomial $(x-1)(x-2)(x-3)$ has only two roots if you have constructed segments of lengths 1 and 2 but have not yet got around to constructing a segment of length 3. And the polynomial x^3-2 never at any time has any roots. In spite of such oddities, one can do significant field theory.

Some of the many questions which I have not got around to answering are: (1) how exactly would you convince Euclid, on his own finitistic terms, that one cannot 'square the circle'? (2) How much graph theory can one recapture in Euclid's system? (3) Can one do some version of category theory within the system? (4) Can one provide a theory concerning how many steps it takes -- using only the six basic constructions provided within the system -- to construct different integer-length segments? (5) How long a segment can one construct with only 1000 uses of these six basic constructions?

Just as Bridges has an ongoing project trying to see what form theorems of classical analysis have to take within his 'constructive analysis', I have an ongoing project trying to see just what form various classical theorems (often relying on the axiom of infinity) have to take within my rigorisation of Euclid. The project allows me to study Euclid, to make him more relevant to the contemporary world, and to appreciate some of the advantages enjoyed by classical mathematics in having, not just the law of the excluded middle, but also its static, completed infinities.

Judging from the enthusiastic response I received when I sketched this project in a lecture I gave last spring at the Mathematics Institute at Oxford, I think I may reasonably hope one day to publish a book about it.

For readers who know me, let me say that (1) my philosophy-of-mathematics book has recently been accepted for publication; (2) I am revising *Mathematics: A Concise History and Philosophy* (which has been reprinted); (3) I am completing an article on the history of the Bachet equation; (4) I am writing a note on the arbelos; (5) I am trying to learn some ancient Greek; and (6) I am still looking for a job.

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Fran Abeles, Judy Grabiner win awards

Two members of the Society have recently won honours.

Fran Abeles received, at the Kean College Commencement in May 1996, the "Presidential Excellence Award for Distinguished Scholarship in Recognition of Exceptional Scholarly Research".

Judy Grabiner received a Carl Allendorfer Award from the MAA for her article "Descartes and Problem-Solving", *Mathematics Magazine* 68 (1995). These awards are given for articles of expository excellence in *Mathematics Magazine*.

Congratulations, Judy and Fran!

No perfect calendars

Ed Cohen

Calendars are fascinating. Gauss wrote about the Hebrew, Julian, Gregorian, and Easter calendars. In his *Werke*, these articles are considered as astronomy, perhaps a branch of mathematics in his time. Besides the calculational aspects of calendars, any of these will of necessity have to consider the solar, lunar, and/or sidereal (star) phase of the subject. Unfortunately, the earth does not go around the sun in a "considerate" number of days, but rather approximately 365.2422 days. The moon goes around the earth in 29 days and an "inconsiderate" number of hours, minutes, and seconds. In other words, one had to think up a calendar (Gregorian at present) that is workable but certainly not perfect.

In my next talk to the Society, I shall indicate how various people tried to reform the Gregorian calendar, mainly through the 1920s, 30s and 40s, through the League of Nations and then through the United Nations. Two of the many proposals (by George Eastman and Elisabeth Achelis) almost succeeded. I shall discuss these, showing their good and bad aspects. Of course, other proposals have recently been examined, especially one worked on very meticulously by a Franciscan friar and propounded very seriously by a Dominican sister until her recent death in 1991. I shall point out why this calendar will never be popular, but suggest a modification which might work.

ecohen@aix1.uottawa.ca

Conference honours Abe Shenitzer

Longtime CSHPM member Abe Shenitzer turned 75 earlier this year. To mark the occasion, a day-long conference in Abe's honour was held on October 5 at York University in Toronto, his home institution since 1969.

Two members of the Society were among the featured speakers. Ed Barbeau talked about "Fourier series" and Helena Pycior's topic was "George Berkeley, mathematics and philosophy: Berkeleian scholarship into the 1990s". Other talks were given by Harold Edwards ("On the fundamental theorem of algebra"), Peter Hilton ("From geometry to algebra: reflections on the birth of homological algebra"), and Walter Littman ("The two-way street between control theory and partial differential equations").

A fine banquet completed the festivities. Superbly organized by CSHPM members Israel Kleiner and Martin Muldoon, the conference was very well attended and was judged a great success.

In search of "originator understanding"

Barry Davies

I work at SoftLogic Solutions Inc., a small computer consulting firm in Ridgefield, Conneticut. My interest in the history of mathematics and science can best be expressed by quotations from two of my favourite scientists. James Clerk Maxwell said, "It is of great advantage to the student of any subject to read the original memoirs on that subject, for science is always most completely assimilated when it is in its nascent state". And Michael Faraday said, "names are one thing and science another". I must confess that in recent years I have become suspicious that a great deal of originator understanding has been lost, and that proliferation of jargon is hurting science.

Consequently, I am taking an historical perspective in pursuit of my favourite subject, differential geometry. In particular, I would eventually like to study the process by which Gauss discovered the curvature that bears his name. You can see samples of my work, and get an overview of the effort, from my web home page, at http://www.softlogic.com/pp/home.htm. The "pp" stands for "pocket physics", which essentially means that the work is funded out of pocket change.

I am interested in illustrating the idea of a three-dimensional curved space, without using a fourth dimension and without using any of the mind-boggling ideas that are associated with Einstein's theory of relativity. My main source is Levi-Civita's *Absolute Differential Calculus*. Following Levi-Civita, I would like to talk about "geodesics" not as shortest paths but as straight lines, where straightness is defined in terms of parallelism and conforms to the idea of Euclid's original definition. These ideas are the subject of my "current work" web pages.

daviesb@usa.nai.net

New members

The following have recently joined the Society. A warm welcome to all!

Lee Cohen, Hampden-Sydney College, H-S Box 155, Hampden-Sydney, VA 23943, USA

Barry Davies, 221 Ramapoo Road, Ridgefield, CT 06877, USA

David Devidi, Department of Philosophy, University of Waterloo, Waterloo, Ont. N2L 3G1

Madeline Muntersbjorn, Department of Philosophy, Scott Hall, University of Toledo, Toledo, OH 43606, USA

Paul-Emile Réthier, Cégep Ste.-Foy, 849 Duchesneau, Ste.-Foy, PQ G1X 2Z1

"Items of interest"

Wanderings and activities of Society members

Fran Abeles will speak on "Charles L. Dodgson's Contributions to Linear Algebra and the Theory of Parallels" at an AMS special session on the history of mathematics at "Cal Tech", Pasadena, November 1996.

Rebecca Adams has finished her PhD at McMaster University, under the supervision of Greg Moore, and is now teaching at Southern California College, Costa Mesa. Her new e-mail address is radams@sccu.edu.

Liliane Beaulieu
* is still working on her histories (one in French, one in English) of the Bourbaki group of mathematicians
* is also writing a number of articles, for publication, on Bourbaki's discussions of set theory, linear algebra, and integration theory, and has also recently published a study of Bourbaki's humour
* is organizing a colloquium series in the history of combinatorics and group theory at the University of Montreal's Centre de recherches mathématiques, where she is a guest researcher.

Len Berggren has completed, with Glen Van Brummelen, an analysis of Abu Sahl al-Kuhi's "On the Ratio of the Segments of a Single Line that Falls on Three Lines".

Alejandro Garciadiego
* is spending the 1996-97 academic year at the Dibner Institute for the History of Science and Technology at MIT, where he is studying the possible influence of some American institutions (e.g. MIT, Harvard, Princeton) on the professionalization of mathematics in Mexico during the 1930s and '40s
* will take part in a lecture series on mathematics and aesthetics in Bogota, Colombia, in December 1996.

Katherine Hill
* is spending the 1996-97 academic year as a lecturer in the Science Studies Unit at the University of Edinburgh
* gave a paper on "The Rhetoric of Utility: Negotiating the Role of Mathematical Practice in Early Modern England" at a meeting of the History of Science Society, Atlanta, November 1996.

Barnabas Hughes' paper on "Arabic Algebra, Victim of Religious and Intellectual Animus", given in 1990 at a symposium sponsored by the Herzog August Bibliothek, Wolfenbüttel, Germany, has recently appeared in the volume of symposium proceedings, published by the Library and available from it.

Helena Pycior
* is completing her history of British algebra to 1750, which will be published by Cambridge University Press
* is a co-editor of the recently published *Creative Couples in the Sciences* (Rutgers University Press). This volume includes an article (by Sylvia Wiegand) on Grace Chisholm Young and William Henry Young.

Glen Van Brummelen has completed, with Len Berggren, an analysis of Abu Sahl al-Kuhi's "On the Ratio of the Segments of a Single Line that Falls on Three Lines".

Minutes of the Annual General Meeting -- May 31, 1996

1. **CSHPM Council election:** Ballots for the CSHPM Council were distributed and collected.

2. **1997 Joint Meeting with British Society for History of Mathematics:** The joint meeting, with a theme of trans-Atlantic mathematics, will occur on July 18-20, 1997.

3. **1996 *Proceedings*:** Jim Tattersall noted that the procedure for submission of papers will be the same as in the past. Participants are urged to send their submissions as early as possible.

4. **Secretary-Treasurer's Report (Glen Van Brummelen):**

* The minutes of the 1995 Annual General Meeting were approved as distributed.
* The 1995 financial statement was presented and approved.
* The Society has lost its operating grant from SSHRC, due to a breakdown in communication between SSHRC and the CSHPM. Glen Van Brummelen, Tom Archibald and Robert Thomas are negotiating with SSHRC through the HSSFC to remedy the situation.
* Due to the relative financial health of the Society, the Secretary-Treasurer sees no reason to increase dues to compensate for the loss of SSHRC funding. ***Motion***: To set 1997 dues at the same level as the 1996 dues. ***Approved.***
* Glen Van Brummelen reported that legal advice suggests we may be able to obtain charitable status for the CSHPM in Canada. Work is ongoing.
* ***Motion***: To withdraw our $100/year support of the Canadian Undergraduate Mathematics Conference until SSHRC funding is restored, and to send our regrets. ***Approved.***
* ***Motion***: To pursue a cross-membership arrangement with the British Society for History of Mathematics. ***Approved.***

5. **President's Report (Robert Thomas, in Tom Archibald's absence):**

* The 1997 Annual Meeting is tentatively scheduled for June 6-8, at Memorial University, St. John's, Newfoundland. Robert Thomas informed the membership of the Learneds' new policy of sending registration pamphlets only to those who request them.
* ***Motion***: To approve a trial affiliate membership agreement with the Canadian Society for the History and Philosophy of Science for 1997. CSHPS members will be able to purchase CSHPM affiliate memberships for $5. This affiliate membership will not include a copy of the annual *Proceedings*, which will be available for purchase for $10. ***Approved.***

6. **Election of CSHPM Officers (Greg Moore):** ***Motion***: To hold the election of officers to the CSHPM Council biannually, in odd-numbered years. ***Approved.*** Secretary's note: The membership will need to approve an appropriately worded official change to the bylaws, to be presented at the 1997 Annual Meeting, before this change takes effect.

7. **Refereeing of Papers for the Annual Meeting:** Tom Drucker agreed to form a committee to establish criteria for the refereeing of papers submitted for the CSHPM Annual Meeting. An official motion will be made at the 1997 Annual Meeting.

8. **Notes of Appreciation (Robert Thomas):** The following people and institutions were gratefully thanked for their contributions:

* Tom Archibald, past president and CSHPM representative to the Canadian Federation for the Humanities / Humanities and Social Science Federation of Canada
* Acadia University, for administrative assistance
* Len Berggren, chair of the special session

* Tom Drucker, program chair of the annual meeting
* Craig Fraser, for his work on the nominating committee
* Hardy Grant, for his work on the *CSHPM Bulletin*
* Greg Moore, chair of the meeting (in Tom Archibald's absence)
* Jim Tattersall and Providence College, editor and printer of the *Proceedings*
* Glen Van Brummelen, continuing work as Secretary-Treasurer
* The King's University College, administrative assistance
* Headley Velmer of Brock University, local organizer of these meetings for the CSHPM.

9. **Report of Returning Officer, CSHPM Council:** The results of the CSHPM Council election are as follows:

	YEA	*NAY*
Robert Thomas (President)	31	0
Jim Tattersall (Vice-President)	30	0
Glen Van Brummelen (Secretary-Treasurer)	31	0
Israel Kleiner (Councillor)	30	0
Sharon Kunoff	30	1
Jacques Lefebvre	31	0

All candidates are approved.

10. The meeting was adjourned.

Glen Van Brummelen, Secretary-Treasurer

Secretary-Treasurer's Report -- 1995

Credit		*Debit*	
Membership dues	$8252.96	Publications (*Bullletin/Proceedings*)	$1549.96
SSHRC grant	3551.00	Travel expenses	1964.36
Other income	0.00	CFH membership dues	868.00
		Historia Mathematica subscr's	3340.90
		PhilosophiaMathematica subscr's	1586.46
		Conference expenses	758.31
		Canadian Undergrad. Math. Conf'ce	100.00
		Miscellaneous (stationery, postage, secretarial help, etc.)	481.52
TOTAL	$11 803.96	TOTAL	$10 649.51

SURPLUS:	**$1 154.45**
AMOUNT BROUGHT FORWARD (1993):	**$2 503.67**
BALANCE:	**$3 658.12**

Comments and Recommendations

*A. **Membership and balance on the rise**:* The Society showed a healthy surplus for the second year running. Membership is increasing, primarily in the U.S. and among graduate students. The Society's WWW site seems to be bringing in many of the new members.

*B. **Loss of ALL SSHRC money**:* As of mid-May, we may have lost all SSHRC support for 1996, not only the phased reduction already announced. This includes the money for the travel subsidies for the annual meeting. This seems to have been due to some sort of administrative error at SSHRC. Discussions are proceeding; the membership will be updated at the meeting.

*C. **Attempts to set up a charitable-donation status for the CSHPM**:* I am pursuing this as a possible way to recoup some of the lost SSHRC money. The unsettlement of my information source, the Humanities and Social Sciences Federation of Canada (formerly Canadian Federation for the Humanities) is frustrating my efforts, but I may have an update at the meeting.

*D. **Sponsorship of the Canadian Undergraduate Mathematics Conference**:* We sponsored this conference ($100) last year. In light of the loss of SSHRC money, I recommend that we regretfully decide not to repeat the sponsorship in 1996.

DUES RECOMMENDATION: Below are my predictions for the 1996 Budget, assuming the loss of all SSHRC money:

Credit		*Debit*	
Membership dues	$8800.00	Publications (*Bulletin/Proceedings*)	$1550.00
SSHRC grant	0.00	Travel expenses	107.96
Other income	0.00	HSSFC membership dues	882.50
		Historia Mathematica subscr's	3700.00
		Philosophia Mathematica subscr's	1600.00
		Conference expenses	950.00
		Canadian Undergrad. Math. Conf'ce	0.00
		Miscellaneous (stationery, postage, secretarial help, etc)	480.00
TOTAL	$8800.00	TOTAL	$9269.96

1996 PROJECTED DEFICIT: $469.96

It is a tribute to the Society's financial health that it can resist the heavy damage from the loss of SSHRC income.

If charitable-donation status can be achieved before the end of the year, I will send out a one-time appeal for donations from members of the Society. A spot for donations will appear on the 1997 membership renewal form.

I thus recommend ***no increase in membership dues for 1997***, because
(a) Our projected deficit is not large, provided membership grows as anticipated;
(b) A possible gain via donation revenue has not been factored into the above;
(c) I anticipate a continued increase in membership, if American recruitment is emphasized.

Glen Van Brummelen, Secretary-Treasurer

Internet site

(continued from page 5)

a folder and have your software send all messages from the list to that folder. To subscribe, simply send an e-mail message to majordomo@maa.org containing the single phrase subscribe math-history-list. Expect to receive a welcoming e-mail with further instructions. *Save this e-mail!* Nothing is more infuriating to e-mail-list members than to receive yet another message asking, "How do I unsubscribe from this list?"

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COVER

The cover illustration is from Charles Hayes's *Treatise of Fluxions* (1704), where it accompanies an attempt to prove the existence of higher-order infinitesimals. AC and AD are respectively a "common" parabola and a cubical parabola, with common axis AB. According to Hayes, the angle of contact FAD is "infinitely less" than the angle of contact FAC, which in turn is less than any given rectilinear angle (cf. Euclid III, 16). George Berkeley dismissed the argument as "absurd & perfectly contradictious".

Correction

In a report in the previous issue (number 18, May 1996, page 6) on a special session on the history of mathematics at the joint AMS/MAA meeting in Orlando, Florida in January 1996, the name of Marcia Ascher was inadvertently omitted from the list of Society members who presented papers. The *Bulletin* regrets the oversight.

Call for papers!

Tom Drucker has again agreed to act as program organizer and chair of the 1997 Annual Meeting. Titles and abstracts should be sent to Tom (304 South Hanover Street, Carlisle, PA 17013-3398, U.S.A; greenbem@dickinson.edu) by February 28.

About the *Bulletin*

The *Bulletin* is published (in theory, and by grace) each May and November. Material without a byline or other attribution can safely be blamed on the editor. Les pages sont chaleureusement ouvertes aux textes soumis en français. Please send all comments, suggestions and submissions to Hardy Grant, 539 Highland Avenue, Ottawa, Ont. K2A 2J8 (Canada), hgrant@freenet.carleton.ca.

Actually the present editor is looking to step down, and would welcome volunteers for the succession. The incumbent is prepared to testify that "the duties are delightful and the privileges great" (can anyone spot the quotation?).