

BULLETIN CSHPM/SCHPM

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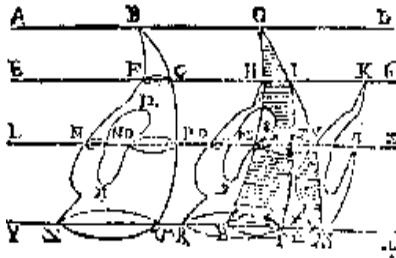
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**Canadian Society for History
and Philosophy of Mathematics**

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

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ABOUT THE SOCIETY

Founded in 1974, the Canadian Society for the History and Philosophy of Mathematics/ Société canadienne d'histoire et 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

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Members of Council:

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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, USA, mkinyon@iusb.edu.

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

Midwest Mathematics History Conference

The Ninth Midwest History of Mathematics Conference will be held on October 4-5, 2002, at Miami University in Oxford, Ohio. In anticipation of the Ohio Bicentennial in 2003, this year's conference theme will be "History of Mathematics in America." Karen H. Parshall (University of Virginia), and David Zitarelli (Temple University) are the invited speakers.

Authors wishing to present a 15-minute contributed paper consistent with the theme of the conference should submit an abstract by September 1, 2002. More information, including registration forms, will be available after August 1. Send your abstract or request for information to: History of Mathematics Conference, Dept of Math. and Stats., Miami University, Oxford, Ohio 45056. Phone (513) 529-5818; Fax (513) 529-1493; or email the director, David Kullman, at kullmade@muohio.edu. More details about the conference are available on the web at <http://unixgen.muohio.edu/~MathStat/>

Ohio Masters of Mathematics

A collection of biographical sketches featuring prominent mathematicians who were born in Ohio, educated in Ohio, or worked in Ohio is being developed by the MAA Ohio Section as part of Ohio's Bicentennial celebration. The project has been endorsed by the Science & Technology Council of The Ohio Bicentennial Commission. It is designed to foster public understanding, education, and appreciation of mathematics as a human endeavor and Ohio's contributions to that enterprise.

We are seeking short biographical sketches to be posted on the world wide web. The biographies on this web site should be no more than 2 pages in length, along with a 3- or 4-line summary for the main page. See <http://129.1.87.63/bicen/index.html> for examples. If you know of a more extensive web site that features an Ohio mathematician, we can include include a link to that site.

If you are interested in contributing a biography to this project, please contact David Kullman at kullmade@muohio.edu or Thomas Hern at hern@wcnet.org about the site or the guidelines.

President's Report

In my limited experience in academia, I've come to only one unshakable conclusion: there is never enough time to fulfill one's ambitions. Time is short, and mine as CSHPM president comes to an end this month, it seems, mere months after it began. In two years we've seen a number of changes, both to the Society and to the history of mathematics community in North America. I'm most excited about the birth of the new Special Interest Group on the History of Mathematics, formed this past January by the Mathematical Association of America. A number of us were involved in its founding, and I look forward to the use of this SIGMAA to propagate the use of history in the college mathematics classroom — something that I'm sure we all agree could use further development. Our research labours have their most immediate potential impact in education, and I encourage — nay, urge and beg — all of us to promote a fruitful interaction between us and the new SIGMAA.

It is particularly gratifying to bow out at the coming special CSHPM Annual Meeting, with a tribute to our founder Kenneth May. As historians, we of all people can appreciate the value of an opportunity to reflect on our own story. The Society has grown remarkably since its birth, both in size and in influence; one wonders how dramatically our own lives might have differed if it were not for Ken May's vision. He would never have approved of a Society that existed strictly for its own benefit; it is thus particularly appropriate that we include in our return to Toronto a joint session with our twins, the Canadian Society for History and Philosophy of Science.

Our interaction with siblings does not end with the SIGMAA and the CSHPM. At the May meeting, the Executive Council hopes to propose that we renew our practice of joint meetings with the British Society for History of Mathematics, either in 2003 or 2004. Our last occasion, also in Toronto in 1999, was extraordinary both for its quality and for the bridges built (not to mention that I actually bought a house during that

meeting!). We hope for the same in an upcoming meeting across the pond. The absence of John Fauvel, former president of the BSHM, will be painfully felt, but our activities will, I'm sure, honour his legacy.

Among other developments we are awaiting further submissions on a new logo for the CSHPM. Any decisions on the logo will fall to the next Council. Michael Kinyon, Greg Moore, and I are working with a publisher to put together a collection of essays in the history of mathematics deriving from talks given at past CSHPM conferences. Michael Kinyon has done a stellar job editing the Proceedings of our annual meetings for the past couple of years; his successor will be hard-pressed to reach Michael's standards. Sharon Kunoff is also departing her position as co-editor of the Bulletin. It's hard to imagine how it can survive without her; we are all deeply indebted to her for her amazing dedication. The Council has begun to discuss the addition of free or dirt-cheap undergraduate memberships, more on which later.

My greatest thanks go to the Council, which has grown into a fine, dedicated small community. Between them they have helped arrange the annual meetings, managed the membership rolls and financial records, maintained our web site, published the Proceedings and the Bulletin, and many other tasks. I had the great pleasure to sit back and watch it all happen as if by magic. I am excited that we have a number of new volunteers to take over posts from retiring incumbents; the infusion of new blood will help to invigorate us.

Finally, to all of you: Thank you! It's been fun.

<p>This year at the Annual General meeting our joint session with the Canadian Society for the History and Philosophy of Science will be funded by The Humanities and Social Sciences Federation of Canada / La Fédération canadienne des sciences humaines et sociales. This is to thank them and acknowledge their support. Further acknowledgment will appear in the programme.</p>
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Treasurer's Report

The financial report for 2001 ought to justify the increase in dues and charging for the Proceedings (which I'm sure we are all pleased that most folks are buying). The statement below attempts to do that, but not at the cost of falsifying the figures. In accordance with a suggestion I made last year, I am trying to give an idea of the year's activities independent of when they were paid for (I just paid for the Proceedings' printing today, 2002/03/15). For the actual dollar amounts, carefully added up in their separate currencies, see the separate statements for them. They indicate a quite illusory surplus of about a thousand dollars (little ones) on the irrelevant calendar year. Combining those figures with those below, our financial position in the operating year 2001 moved from a balance of about \$10,000 to \$7,000. As we all know, this is the sort of thing one can afford to do only a couple of times. The year 2002 should not be a second.

Financial Statement for 2001 Activities

Credit		Debit	
SSHRC travel grant	3480.00	SSHRC travel	3480.00
Sales of old Proceedings	38.86	publications	4965.36
dues/subscriptions	14123.12	HSSFC dues	1940.00
interest	187.43	Historia Mathematica	5309.98
Conference fees	444.00	Philosophia Mathematica	2240.26
		BSHM (2000-2001)	435.49
		CSHPS / SCHPS	220.00
		Conference speaker	1350.51
		meal	897.20
		administration	184.90
totals	18273.41		21023.70
		deficit	2750.29

At the end of 2001 the K. O. May Fund was valued at \$2945.18. It has been re-invested for several years, the only way at present to get any interest to speak of.

Notes

The conference is a major expense and a major focus of the Society. I do question, however, the amazing amount we spend on feeding the modest number of persons that attend the AGM. Through the good offices of SSHRC, I was able to have removed a 15% 'service' charge that was originally added to the above amount. Mrs Cohen's suggestion of investing the Society's non-May nest egg was profitable until the recent collapse of such interest rates. The journal items are just money paid to the Society for their respective publishers. Likewise the BSHM and CSHPS / SCHPS are the result of what we have been paid by members to belong to the other organizations minus what we were owed by them for their members joining the Society. The reasons for the numbers are, however, quite different. The BSHM fee is higher than ours and the number of persons approximately equal; the CSHPS / SCHPS fee was the same in 2001 but three times as many persons chose to have the Society as their primary membership as chose to belong to it through CSHPS / SCHPS. This may change with this year's altered fee structure.

Publications reflects the actual costs of producing the Bulletin and Proceedings for the first time in years (almost---there's still a small printing bill that might appear from Sharon Kunoff's institution). The Proceedings bill was \$3205.06, roughly \$16 per member. I need not add that more could have been spent.

The Society maintains bank accounts in both Canadian and U.S. currencies, and I have balanced the two accounts separately (see separate accounting). The conversion rate I have used (1.5905) is the one that I used to decide how much travel funds to turn into U.S. dollars. It was our bank's rate that day. Conversion is purely notional, as the Society has not converted any of its own funds for years, and this year I did not actually convert the travel funds either, as there is an imbalance between the two currencies (more comes in in U.S. and more goes out in Canadian).

The rest of the Treasurer's Report

In arguing last year that we needed to raise dues and/or charge for the Proceedings, I made the following prediction for our finances shorn of items that are just passing through:

Hypothetical Financial Statement for 2001

Credit		Debit	
dues/subscriptions	4400	publications	4000
interest	100	HSSFC dues	2000
		conference	1000
		administration	300
		loss on foreign exchange	50 (unrealized)
totals	4500		7350
			deficit 2850

Actual

Credit		Debit	
Sales of old Proceedings	38.86	publications	4965.36
dues/subscriptions	5917.39	HSSFC dues	1940.00
interest	187.43	Conference speaker	1350.51
Conference fees	444.00	meal	897.20
		administration	184.90
totals	6587.68		9337.97
			deficit 2750.29

I am glad that we increased income while we still have a comfortable bank balance. It would be an unnecessarily stressful aspect to the job of treasurer to have to worry about whether a cheque could be written until some income item was received---still worse to be unable to do so. The Society is in quite reasonable financial shape. The above deficit was one we could live with---once. If we do not make a surplus in 2002, we should raise dues again, if by less.

We have for some time violated our constitution in our use of volunteers for signing officers. The bank has not noticed, but in the long run it is better to have one's rules accord with one's behaviour. There is nothing wrong with our behaviour; it's just that the rules specify that the signing officers shall be, by Article VI, Section 2, the President, Secretary, and the Treasurer. Since it is extremely inconvenient for the signing officers to live outside Canada, we have at present the Treasurer and the Vice-President. It seems to me that we ought to allow any officer to be a signing officer with the approval of the Executive Council. The Executive could take into account all aspects of the situation and appoint someone to be the officer other than the treasurer that can sign cheques (a useful precaution if anything were to happen to a treasurer). At the moment the Vice-President was simply my choice, thinking that any officer would do and wanting one
(cont. next page)

in Canada. The current wording of the clause is: The Secretary, Treasurer, or President is authorized to act for and in the name of the Society in all pecuniary transactions with any insured institution. By the way, I interpreted this clause recently, when I was reinvesting the May Fund, to mean that I could not invest other than through a bank or credit union because I read it as referring to deposit insurance. This is not unreasonable, but it is a bit restrictive. What I had in mind was buying a Government bond, but I would have had to do it through my broker, who is not a deposit-insured institution, so I went with the bank. I suggest changing the clause quoted above to read: The President, Treasurer, and any other officer chosen from time to time by the Executive Council is authorized to act for and in the name of the Society in all pecuniary transactions with any institution covered by deposit insurance. If this is thought by anyone to give too much power to the Executive Council, I point out that Article IV, Section 6, gives it the power to appoint either a Secretary or a Treasurer in case of a vacancy.

2001 Operating Financial Statements by Currency

Canadian dollars

Income		Expenditure	
SSHRC	3480.00	SSHRC travel	1588.78
Dues/subscriptions	3629.00	HSSFC dues	1940.00
Interest	187.43	Philosophia Mathematica	408.00
Proceedings sale	15.00	BSHM (49/46)	435.49
		CSHPS /SCHPS(1999;37/10)	200.00
		Conference	1350.51
		Publications	189.73
		Administration	47.59
Total	7311.43		6160.10
	Surplus (deficit) [6610.66 ; 5459.33]		1151.33

United States dollars

Income		Expenditure	
SSHRC (from Canadian)	0.00	SSHRC travel	1189.07
Dues/subscriptions	6598.00	Publications (inc. Web)	990.83
Proceedings sale	15.00	Historia Mathematica	3338.56
		Philosophia Mathematica	1152.00
		Administration	86.33
Total	6613.00		6756.79
	Surplus (deficit) [2193.27 ; 2337.06]		(143.79)

Note

The numbers in square brackets are bank balances rather than income and expenditure numbers. In the Canadian case, \$5149.66 at the end of 2000 and \$5124.41 at the end of 2001 are GICs rather than being in the chequing account.

Respectfully submitted,
Robert Thomas, Treasurer

Web Review: *Evolution of the Internet Listservs and some sites of interest.*

Rob Bradley, Webmaster

In the minds of many people, the Internet and the World Wide Web are synonymous. The web, however, is about a decade old, whereas the internet turns thirty-three this autumn. So what did the internet consist of before the world wide web came along, and focused the attention of the media on cyberspace?

Academics of a certain age know the answer to that question, because major universities were among the original participants in the internet, and a lot of schools have had internet connections since the 80s and even the 70s. Email is the oldest of the internet utilities commonly in use today. Once email programs could handle distribution lists, it was a short step to automating distribution, and the Listserv was born. The next step in the evolution was the Newsgroup, and now the world wide web provides a wide variety of both synchronous and asynchronous communities for virtual discussion.

Listservs are automated email distribution facilities, in which subscribers receive all messages posted to the list by any member, and responses to such messages are also automatically forwarded to all participants. Some lists are moderated, meaning that any message must be vetted by an editorial official before being distributed, while others are free-for-all. Some have open enrollment policies, whereas many lists are "closed", and new participants must be approved by the list's administrator before being allowed into the group.

Since the listserv is decidedly "old" technology, one might expect listservs to be dying out in the twenty-first century. Nothing could be farther from the truth. Listservs are uniquely equipped to handle certain types of online discussion. A closed list, in particular, provides a level of privacy that newsgroups and open chat rooms can't match. Random people cannot come along and start "flame wars," distribute "spam," or otherwise engage in annoying or offensive speech. If duly registered participants do engage in questionable behavior, a moderator can keep the material away from other members. In an unmoderated group, the administrator can remove those who would abuse their privileges, or simply threaten to do so in

private email, which is usually enough to bring about the desired effect.

As a consequence, listservs are alive and well, and are to be found in virtually every corner of cyberspace. There are huge lists with tens of thousands of participants sharing opinions and information on politics, pets, or plastic surgery. There are also some very small, very focused lists. I maintain a list, for example, with 18 members. We were all friends back in high school and college days, and we've since moved on to other lives and other places. But we can stay in touch via our listserv. Internet companies, such as Yahoo, are only too happy to provide free listserv hosting: it's paid for with advertisements from corporate sponsors that are appended to the bottom of list messages. However, many institutions and individuals host listservs that are free from advertisement.

It's impossible to say how many history of mathematics listservs are currently active on the internet. Name a major language, a major figure or period, a particular focus, and there is a probably already a group serving that constituency. The most vibrant forum I know for discussion of the history of mathematics at a level appropriate for researchers and college teachers is the Historia de la Matematica forum, which was established in 1995 by Julio Gonzalez Cabillon, of Montevideo, Uruguay. The Historia Matematica Forum is described as follows by Professor Cabillon: "The purpose of this list is to provide a virtual forum for scholarly discussion of the HISTORY OF MATHEMATICS (in a broad sense), amongst professionals, and non-professionals with a serious interest in the field." The list is officially bilingual (Spanish and English), but members are asked to post in English where possible. Postings in all languages are actually welcome, but Cabillon asks for English abstracts. In fact, virtually all the traffic on the list is in English, but names and email addresses clearly indicate participation from all over the world. (Cont. p.16. See Web Review)

Kleiner to Retire

Long-time Society member Israel Kleiner is retiring this year from the mathematics department of York University, Toronto. The department will host a one-day conference in his honour on Thursday, May 23, and very much hopes that that event will attract many people who are in town for the Society's annual meeting, which begins the next day. (Details can be found on page 9.)

Israel recounted in the *Bulletin* a couple of years ago (November '99) how he developed an interest in the *history* of mathematics after an early specialization in algebra. On sabbatical in the country with which he shares a name, he took up E.T. Bell's *Men of Mathematics* and *The Development of Mathematics* as "bedtime reading"-- and was hooked. That was in 1973. Back at York, he sought and was given a chance to teach a "history" course in his department's then-new MA program for in-service teachers -- and he has, as they say, never looked back. His subsequent success in this "second career" can be gauged by the many commissions that have come his way for articles and reviews, and -- even more -- by the fact that his writings have won no fewer than four prestigious awards. (I list below the publications thus honoured; readers would be much rewarded by seeking them out.) These articles are perhaps distinguished above all by their masterly organization of large bodies of material into skillful and readable syntheses.

At his own university Israel promoted the history of mathematics in two especially significant ways. From about the mid-70s he was the dominant force in campaigns to increase the presence of history in the mathematics department's curriculum. The hardest fight was to win acceptance for a mathematically rigorous fourth-year history course in the honours program, eligible for "major" credit; this was opposed within the department itself, but to no avail. When the dust of battle had settled that offering was securely on the books, where it remains to this day, along with the aforementioned course in the graduate program for teachers, a third-year half-

course on "Famous Problems" approached from an historical perspective, and a third-year Humanities course on the cultural influence of mathematics in western history. Israel has been instrumental in the establishment and/or teaching of all of these.

Another contribution of enormous value has been his creation and running of a seminar on "history and philosophy of mathematics and mathematical education". This has been a Friday fixture in the York mathematics department since 1987. Israel has used his wide network of contacts and his strong powers of persuasion to lure any number of distinguished external speakers. Under so wide a thematic umbrella the range of subjects and the consequent diversity of the audiences have been quite remarkable. Since the operation of such a seminar is so often a group endeavour, it is well to state with all possible emphasis that in this case Israel has essentially done the thing single-handed from the very beginning.

For the history-of-mathematics community in general and the CSHPM in particular the good news about Israel's retirement is that he has no intention of cutting back on his scholarly work. His major project at the moment is a book for a course in abstract algebra with an historical focus; he has taught just such a course several times in York's MA program for teachers. He also plans to keep the seminar up and running. Of course he hopes to have more time for non-academic pleasures, too, including travel -- of which he and his charming wife Nava have done a good deal even while Israel was working -- and enjoyment of his two grandchildren.

I consider myself very lucky in having been not only a colleague but a friend of Israel Kleiner for nearly forty years. Quite apart from his scholarly attainments, he is one of the nicest people in our "business"; I can testify that even when he is kicking your butt at the bridge table, he remains the soul of geniality. I feel sure that I speak for all members of the Society in wishing him a long, healthy, productive and happy retirement.

Israel Kleiner won the Carl Allendoerfer Prize in 1987 for "The evolution of group theory: a brief survey", Math. Mag. 59 (1986), 195-215; the George Polya Prize in 1990 for "Evolution of the function concept: a brief survey", College Math. J. 20 (1989), 282-300; the Carl Allendoerfer Prize (again!) in 1992 for "Rigor and proof in mathematics: a historical perspective", Math. Mag. 64 (1991), 291-314; and the Lester R. Ford Prize in 1995 for "The role of paradoxes in the evolution of mathematics", with N. Movshovitz-Hadar, Amer. Math. Monthly 101 (1994), 963-974.

Hardy Grant (Hardy is a former editor of this Bulletin and a Council member. Israel joins Hardy in retirement and we expect to continue to hear much from them both.)

Annual Meeting to be in Toronto

The 2002 Annual meeting of the Society will be held in conjunction with the 2002 Congress of the Social Sciences and Humanities in Toronto at the University of Toronto and Ryerson University (formerly Ryerson Polytechnic). The meeting will be held Friday through Sunday, May 24-26, 2002. This meeting promises to be exciting and busy. We will have three full days of sessions, starting out with a special session on 'The Legacy of Kenneth O. May', organized by Craig Fraser. This session will feature invited talks by Ivor Grattan-Guinness and Albert Lewis, as well as a talk by Fran Abeles on May's work on group choice and talks reminiscing about May by Tom Drucker and Alejandro Garciadiego.

We shall have three general sessions organized by Amy Shell. Within the general sessions will be minisessions focusing on Euler, calculus, and philosophy. The last afternoon of the weekend features our second Special Session on 'Numerical mathematics' organized by Roger Godard. The last session of the weekend will be a joint session with the Canadian Society for the History and Philosophy of Science entitled 'Proof, Prediction, and Mathematics in Ancient and Islamic Science'. It will include a paper by our president Glen Van Brummelen.

Since no meeting is complete without good food,

wine, and company, Friday evening Craig Fraser will host a reception at his home. For anyone that will be arriving early, there will be a session in honor of Israel Kleiner on Thursday. For more information or to see the schedule and abstracts, please visit the Society website.

For those with time to spare, Toronto has many activities. There is an art exhibition opening on the 23rd of May at Hart House at the University of Toronto. At this time the Feldberg Collection will be on display in the Justina M. Barnicke Gallery. It features self-portraits from Berlin in the 1920's. The exhibition is being sponsored by a number of German institutions and by a number of Feldbergs and Goldbergs. Further information about this, or other special events in Toronto, can be obtained at the information desk at the conference or any at of the major hotels in the area.

Amy Shell (United States Military Academy)

Meeting To Honour Israel Kleiner

This is to announce a short meeting in honour of Israel Kleiner on the occasion of his forthcoming retirement. It is to be held at York University, Toronto on Thursday, May 23, 2002 from about 1:30 to 5:30 p.m. This is the day preceding the annual CSHPM meeting.

The speakers are Craig Fraser (University of Toronto) and Pat Rogers (University of Windsor) representing Israel's interests in History of Mathematics and Mathematics Education. Their talks will be followed by a reception. There is no need to register but let me (muldoon@yorku.ca) know if you are coming, so we can plan the event.

York University is about a 20-minute drive from Toronto International Airport and about one hour by public transportation (somewhat less by car) from downtown Toronto.

Further information, including detailed driving directions will be posted at the meeting web site: <http://www.math.yorku.ca/~muldoon/ik02.html>

Book Review: *Invitation to an Invitation*

An English translation by Leila Schneps of Yves Hellegouarch's *Invitation aux mathématiques de Fermat-Wiles* has been published this year (2002) by Academic Press. The book has already gone through two editions in French and this is a translation of the second (2001). A casual glance at the book (*Invitation to the Mathematics of Fermat-Wiles*) might not indicate the attention the author gives to certain historical aspects of the subject. It may be worth mentioning some of the features that distinguish this particular treatment from the historical point of view.

There were several books on the history of attempts to prove Fermat's Last Theorem that antedated the successful proof by Wiles. It would not have been hard to update them by including a chapter on the Wiles approach as the capstone of the history. The only disadvantage with such an adaptation is that it fails to trace back the history of the elements that went into the Wiles approach and that had not been part of the standard narrative previously. The sequence of Fermat, Euler, Sophie Germain, Kummer, Mirimanoff, and so forth has been engraved in the historical consciousness of students of the work on the Last Theorem.

Hellegouarch's approach starts afresh from the examination of the strands that led to Wiles's proof rather than just to partial results, important as those may have been at the time. As an indication of Hellegouarch's historical sense, he quotes the article on Diophantus (the source of Fermat's interest in the problem), not from the Dictionary of Scientific Biography, but from the Encyclopédie (the article was by d'Alembert). He speculates about Diophantus' position in the history of mathematics and discusses the translation by de Meziriac, the one used by Fermat. He then spends a good deal of effort on the method of 'infinite descent', carefully distinguishing it from induction. In particular, he also gives descent arguments in traditional and 'modern' formulations. This is a helpful piece of detail for those concerned with the history and not just an ahistorical result. He gives a 'Fermat-style' proof of one theorem and an 'Euler-style' proof of

the case for $n=3$. In the context of Euler, he remarks on the possibility of his having used arguments which can be clarified by nonstandard analysis, although he does not refer to recent work by Mark McKinzie calling that point into question.

He notes at the end of the first chapter that it has been mainly historical and lists a few references (sticking strictly to mathematics and perhaps for that reason omitting Mahoney's biography of Fermat). Once one gets into the problems, however, one is in for a pleasant surprise. Problem 3 (starting on page 50 and running through page 56) is a translation into English from James Bernoulli's *Ars Conjectandi* of the passage where Bernoulli numbers first appear. The problem then asks the reader to 'translate this text into the language of modern mathematics, name the points which need proofs, and prove them completely'. This may not make the book handy for an undergraduate textbook, but it does indicate a historical awareness corroborated by the inclusion of extracts from some letters of Abel in the next problem.

The second chapter is on 'Elliptic Functions' and goes back to their discovery, including an account of Euler's contributions. If one has been prepared by the first chapter, one is likely to turn to the problems for historical matter and is not disappointed. The first problem notes, 'The text at the end of this problem consists of pages 7-11 of a text by Abel. Please read these pages and answer the following questions. (1) Briefly analyse the usage of functional notation in the text...'. The article by Abel comes from the second and third volumes of Crelle's Journal. Problem 2 also starts with a lengthy quotation from an Abel article.

The third chapter takes up 'Numbers and Groups' with only a sprinkling of historical notes. This might lead one to think that Hellegouarch has shot his historical bolt by this point and is eager just to get to the contribution of Wiles. Instead, the fourth chapter ('Elliptic Curves') manages in the course of its second problem to quote twelve pages of MacLaurin on the general properties of geometrical lines. The fifth chapter concludes the story by taking the reader through 'Modular Forms' up to Wiles's Theorem. I like the

juxtaposition of the statement of that theorem on page 311 (just a statement, since the author notes that anything more would be beyond the scope of the book) and a commentary talking about Euler's *Introductio in Analysin Infinitorum* on page 312. The last chapter takes the subject of recent work in various directions not strictly in line with Wiles's Theorem.

Many of us have had to give lectures about Fermat's Last Theorem in the aftermath of the amount of attention paid to Andrew Wiles, although by now his name has probably receded into the background for a public more aware of John Nash. It has not been easy to bridge the historical discussions in some of the valuable older books and the work by Wiles that has taken in so many additional elements. Hellegouarch's book is certainly one that is a genuine invitation to get to know the mathematics that led up to Wiles's proof. Since historians might easily overlook the volume, it was worth pointing out the extent to which Hellegouarch regards history as more than just a citation of discoveries without mathematical contexts.

Thomas Drucker (*Tom is co-editor of this bulletin and currently educates and entertains students at the Dept. of Math and C.S. at University of Wisconsin--Whitewater, Whitewater, WI*)

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

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History of Mathematics SIGMAA

The Mathematical Association of America (MAA) is pleased to announce the formation of Special Interest Groups called SIGMAAs. SIGMAAs will provide MAA members who share common mathematical interests with opportunities to organize and interact professionally. SIGMAA activities may include holding meetings and receptions, creating newsletters and web pages, facilitating research and publications, working with other MAA organizations, and generally sharing ideas and establishing a network of interested colleagues.

The first SIGMAA, RUME (Research in Undergraduate Mathematics Education) was formed in 1999. The next two SIGMAAs were BIG SIGMAA (SIGMAA on Business, Industry and Government) and a SIGMAA on Statistics Education. The newest addition is HOM-SIGMAA. In November, 2001, the MAA Committee on SIGMAAs approved the formation of HOMSIGMAA, the History of Mathematics SIGMAA. Rob Bradley and Amy Shell drafted our charter and the Committee accepted it with minor modifications. The charter guides our activities.

Inaugural meeting

The first meeting of HOMSIGMAA took place on Tuesday, January 8, 2002, at 5:00 PM at the Joint Mathematics Meetings in San Diego. With more than 50 historians and mathematicians in attendance, we engaged in a wide-ranging discussion of the goals and activities of the new society. We elected an interim executive committee for 2002 and a nominating committee to aid in the election of HOMSIGMAA's first regular executive committee in late 2002. At the conclusion of the business portion of the meeting we regaled ourselves with a wine and cheese reception, sponsored by the MAA.

Interim Executive Committee for 2002.

2002 is a transitional year for HOMSIGMAA. Towards the end of the year, we will elect our first executive committee in accordance with the provisions of our charter. In the meantime, our

interim executive committee, elected at the inaugural meeting of January 8, 2002, is as follows:

Chair: **Fred Rickey** (United States Military Academy)

Membership Coordinator: **Amy Shell** (United States Military Academy)

Program Coordinator: **Victor Katz** (University of the District of Columbia)

Electronic Resources Coordinator: **Rob Bradley** (Adelphi University)

Secretary/Treasurer: Herb Kasube (Bradley University)

Upcoming Activities

In the future, HOMSIGMAA plans to sponsor numerous activities such as contributed paper sessions and panel discussions at various meetings of the MAA and other organizations. If you have any ideas, please contact any of the members of the executive committee. How do you join? Joining HOMSIGMAA is simple. When you renew your MAA membership, there will be a space to check to join HOMSIGMAA. If your current renewal form does not have HOMSIGMAA listed, simply add it to the space for SIGMAAs. This adds an additional \$10 to your dues. If you have already renewed for 2002, you can

(1) Send \$10 to the MAA and tell them that you want it applied to membership in HOMSIGMAA, or (2) go to MAA Online and download a membership form, or (3) (easiest) call the MAA Service Center at (800) 331-1622 and give them the information over the phone.

Want more information?

If you wish to have more information about HOMSIGMAA, please contact one of the members of the executive committee. There is also a HOMSIGMAA website at: <http://www.adelphi.edu/bradley/HOMSIGMAA/>

Herbert Kasube, Dept. of Math., Bradley Univ.

News from the Euler Society

Ed Sandifer is the editor of the Euler Society Newsletter, the first issue of which appeared in January 2002. Those interested in joining the Euler Society can do so by sending a check for \$50 US to Mary Ann McLoughlin, Department of Mathematics, College of St. Rose, 432 Western Avenue, Albany, New York 12203. The mission of the Euler Society is threefold. It encourages scholarly contributions examining the life, research, and influence of Leonhard Euler. In part, these will be set within his time, that is, within the Enlightenment, the rise to European power status of Russia and Prussia, and the growth of royal science academies. The Euler Society will also explore current studies in the mathematical sciences that build upon his thought. It will promote translations into English of selections from his writings, including correspondence and notebooks, in leading up to the tercentenary of his birth in 2007.

The Euler Society Executive Committee is as follows:

Chancellor; **Ronald Calinger**, calinger@cua.edu

President; **Robert Bradley**,
bradley@panther.adelphi.edu

Vice-President; **Rudiger Thiele**,
thieler@medizin.zin.uni-leipzig.de

Ombudsman (ex officio): **John Glaus**,
restinn@exploremaine.com

Treasurer; **Mary Ann McLoughlin**,
mcloughm@mail.strose.edu

Secretary; **Edward Sandifer**,
esandifer@earthlink.net

In the first issue of the Euler Society newsletter, the editor includes a call for limericks, 'continuing a vile tradition in newsletters of Certain Societies on the History or Philosophy of Mathematics'. In addition, they will go so far as to print clerihews, haiku, and other short poetry related to the life, works, and influence of Leonhard Euler. Those who wish to stoop to this form of recognizing Euler's titanic influence (the result of the Houston football team's moving to Tennessee) can send them along to Ed at the electronic address above.

How I came to love the History of Mathematics. *Maria Zack*

It is easy for me to pinpoint the moment that I realized that I was a mathematician. It was in 1981 and I was a freshman physics major sitting in an electricity and magnetism lab. The professor said, 'We know that $\sin A = A..$ ' At that instant I knew that I was not ever going to be a physicist. It deeply disturbed me that the professor threw away all but the first term of the Taylor series and didn't even acknowledge that he was making an approximation. The next day I changed my major to mathematics.

My mathematician-husband claims that my interest in the history of mathematics can be traced to my life-long passion for churches and church architecture. Ask anyone who has traveled with me and they can tell you all about the obscure (but interesting) churches I have dragged them to see. I once took 38 students on a rambling drive in rural Kenya in search of a particular Anglican church. They griped and they groaned but when they caught sight of the murals on the walls of the church all of them grew silent. Four years later many of them remember that church in Muranga and the priest who was so proud of his parish building.

I am a representation theorist by training, but in 1996 I was asked to teach a course in the history of mathematics at my university. In my first attempt at teaching the course, I used a standard textbook and was not very satisfied with the results. The students found the subject dry and rather boring. This was completely my fault. At the conclusion of this course, I had the good fortune to stumble across William Dunham's lovely book *Journey Through Genius*. This book gave me a new way to think about teaching the history of mathematics and inspired me to teach a class that was focused on some of the significant ideas in mathematics and lives of the people behind those ideas.

Some time in 1998, over the course of a mediocre cafeteria lunch, I was telling one of my colleagues in the history department about my (Cont. p. 14. See Maria Zack)

Maria Zack (Cont. from previous page.)

newfound interest in the history of mathematics. We began to discuss the role of Hooke and Wren in the rebuilding of London [after the Great Fire of 1666]. I found it curious that two scientists with a very limited background in architecture were put in charge of such a massive rebuilding project. This single conversation has led me to unite my two passions and investigate the links between mathematics and sacred architecture. At the moment I am most interested in Wren and Hooke's Christian churches in the City of London, but my interests are ever expanding.

I have found in the history of mathematics community a great support as I have ventured into this new area of scholarship. It is encouraging to have companions in the labor of blending an understanding of technical aspects of mathematics with the historical context in which they were created.

Maria Zack is a new member of the society. For further information see p. 11

History of Computer Science

One of your editors spoke at a recent workshop on the use of history to improve undergraduate computer science teaching. Several speakers addressed the content of a course devoted to the history of computing. Some fundamental differences seem to exist between such courses and history of mathematics. The two most in evidence were the opportunity to bring physical materials into the classroom and the attractions of the field for students of a wide variety of historical disciplines.

One speaker spent his entire lecture showing examples of technology associated with the development of the computer. It seems he was able to acquire these when an institutions were trying to figure out how to get rid of obsolete pieces of equipment.

Historians of labour, business, technology, and culture all seem to find in the historical evolution of computing grist for their respective mills. One has become used to the greater availability of funds for anything with the word

'computer' in the title. It seems doubly unfair for the historians of computer-related activities to have a wider audience as well.

The conference organizer, Bill Aspray of the Computer Research Association (whose training as a historian of mathematics antedates his conversion to the history of computers), felt that, while the history of computers and information technology is a thriving field, it has not had quite the same opportunity for reflection on methodological issues that have long burdened the history of mathematics. I was asked to speak to give a sense of what the historian could try to accomplish in the technical arena.

There are plenty of reasons why the history of mathematics and the history of computing have tended to grow apart but it is probably the case that the history of recent mathematics can be enriched by looking at the machines on which the computations are carried out as well as the products of those computations (like the original proof of the Four Colour Conjecture). Historians of mathematics willing to admit the presence of external factors in the account of their discipline have in the history of computer science a rich fund of material on which to draw. It was good fortune that enabled me to enjoy a sense of the opportunities first-hand. Tom Drucker

Personals

Amy Shell and Christopher Gellasch tied the knot on March 30th. The wedding was in Bloomfield Hills, just north of Detroit, from which the bride hails. Chris is a Captain in the Medical Service Corps of the Army, teaching geology at West Point for the past three years.

The couple met while teaching swing dancing at West Point. In keeping with that theme, the reception included a swing dance lesson for the guests by the bride and groom (Pictures of Fred Rickey learning to swing dance can be had for a small donation to the couple's honeymoon fund). Now that the wedding is over, Amy faces the more challenging task of changing from Shell to Shell-Gellasch.

Some thoughts from the Editor

It hardly seems possible that five years have passed since the Annual General Meeting in St. Johns, Newfoundland, when Hardy Grant asked if anyone would be interested in co-editing the Bulletin. I had just retired from C.W. Post and felt it was a good time to volunteer. It was a fortuitous decision. Hardy is a wonderful person and I enjoyed my tenure with him, and in addition I learned a lot. Two years ago, when Hardy felt it was time to step down, my good fortune continued when Tom Drucker volunteered to co-edit. We have worked well together and I trust as I step down he will continue to have as good an experience as I have had. I have also had the good fortune to work with three excellent Presidents of the Society, Robert Thomas, Jim Tattersall and, for the past two years, Glen Van Brummelen. I would be remiss if I did not thank each of them for their good counsel.

Working on the Bulletin puts one in touch with many fine people with wide-ranging interests. The members of the Council are cooperative and a pleasure to deal with. I suppose my only complaint is an occasional missed deadline. My only regret is that I can't be at the Annual General Meeting this year to take my bows and wish Israel Kleiner as wonderful retirement as I am having. Fortunately my reasons for not making the meeting are happy ones. My oldest daughter will be graduating from The Jewish Theological Seminary Cantorial School on May 23 and shortly thereafter we leave to attend the Bat Mitzvah of a close friend in Canberra, Australia. I hope to see you all in 2003. I am also fortunate in that I already have a replacement. A call went out on the CSHPM listserv and Eisso Atzema kindly volunteered. I wish him luck!

I expect to see a new looking Bulletin next year. I know people are at work on a new logo. Perhaps you can choose a name for this publication instead of just entitling it Bulletin. It would also be nice to have contributors to regular features such as Book Reviews, Personals, and How I came to love the History of Mathematics. Notices and reports of

meetings are always welcome and it is nice to have an original article on a historic tidbit or the impact of history in the math classroom. I know the new team will have many ideas and I am looking forward to seeing their work. Good luck, Tom and Eisso. I am looking forward to your innovations and will be happy to assist in any way I can.

Sharon Kunoff

and Some Thoughts from the Co-Editor

As Sharon Kunoff hands over the editorial reins at the end of her five-year stint, I wished only to observe that the bulletins to which I have contributed as a co-editor would never have appeared without Sharon's work. In the first place, she is rather more effective at following up contributors whose delinquency in submission has gone down to the wire. I should long ago have given up, but Sharon's perseverance won out in the end. The journals would have lacked both variety and heft without her activity.

More generally, the fact that the bulletins took form on paper is solely Sharon's doing. She refers modestly to her competence with computer software, but she could transform submissions in a variety of formats into something resembling homogeneity. There certainly were instances where I had given up on ever being able to get text into print, and Sharon's persistence and technical skill triumphed over incompatibility.

It is a pleasure to have a share in editing the bulletin of the Society (and Rebecca Adams has offered to help with the editing, which will make it even less of a task). On the other hand, nothing I have done in that capacity would have seen the light of day without Sharon Kunoff. It was the Society whose star was lucky when Sharon offered her talents to the editing of the bulletin. In view of the activities that will be keeping her from the annual meeting, let me (on behalf of the Society as well as her co-editors) wish her and her family 'Mazel Tov'.

Tom Drucker

Web Review (Cont. from p.7)

There are about 800 registered members of the Historia Mathematica Forum, including many familiar names from the CSHPM, and only these members can contribute to the discussion with posted messages. However, in a great example of how the new web technology can enrich the older email technology, current archives are available on the web, and everyone is welcome to read the discussion: both the current hot topics and an archive of all postings dating back to 23 June 1998. Back in the summer of 1998, Euclid, Beppo Levi and Birkhoff & MacLane were popular topics, as was the Fields Medal. This spring, folks were discussing Euclid (again!), Sotheby's auctions, Poincaré and relativity, and John Nash's appearance on the television show "60 Minutes."

You can browse the archives by date or thread, or search for particular words and phrases. Archives of the Forum, as well as background on the list and information on how to subscribe, are available at http://www.mathforum.org/epigone/historia_matematica. The listserv itself is hosted by The Association for Progressive Communications (apc.org), but these archives are made available by Drexel University, who host mathforum.org. Mathforum.org is definitely worth a visit as well, with mathematical resources for both students and teachers, a search engine, the "Problems of the Week," and a gateway to more than three dozen additional listservs and newsgroups. There is something mathematical for nearly everyone at the mathforum site.

Proceedings Editor Vacancy

Michael Kinyon has done an excellent job with the task of editing the proceedings for the annual meetings over the last couple of years. Despite some serious logistical challenges, he has managed to put the volumes out looking as good as ever before. The membership is greatly in his debt for the time he has invested in all the publishing details, although even that is small compared to the number of reminders he had to send out to delinquent contributors (some of us know).

Unfortunately for the Society, Michael will not be able to continue this task beyond the proceedings for the 2002 meeting. The ideal scenario would see a prospective successor willing to start early enough to get a sense of what is involved to be able to take on the 2003 proceedings solo. Michael would be happy to discuss the variety of tasks the editing requires and can be reached at mkinyon@wmich.edu, by fax at (616) 387-4530, by phone at (616) 387-1417 or by post at Dept. of Mathematics, Western Michigan University, Kalamazoo, MI 49008-5248 USA

The society again wishes to thank the Nominating Committee (Rob Bradley, Hardy Grant (chair), and Jim Tattersall) for their excellent choices for the current slate. Although no further nominations were received, the Council believes an election should be held. Ballots are enclosed with this mailing. Counting will be done at the AGM later this month.

President: Len Berggren

Vice-President: Rob Bradley

Secretary: Pat Allaire

Treasurer: Roger Godard

Council: Amy Ackerberg-Hastings, Adrian Rice, Israel Kleiner

ABOUT THE BULLETIN

The *Bulletin* is published each May and November, and is co-edited by Tom Drucker druckert@mail.uww.edu and Sharon Kunoff cshpm@cwpost.liu.edu. Material without a byline or other attribution has been written by the editors. Les pages sont chaleureusement ouvertes aux textes soumis en français. Comments and suggestions are welcome, and can be directed to either of the editors; submissions should be sent to Tom Drucker and Sharon Kunoff at the above e-mail addresses, or by post to Tom Drucker, Department of Mathematical and Computer Sciences, University of Wisconsin--Whitewater, Whitewater, Wisconsin 53190.