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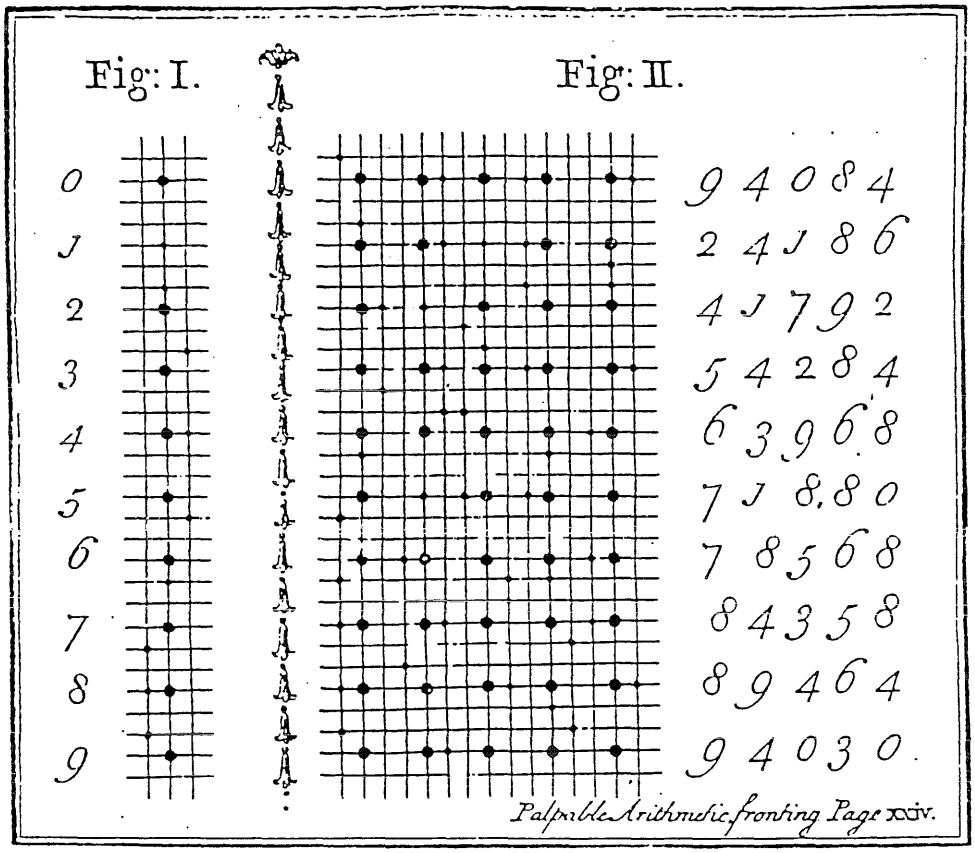
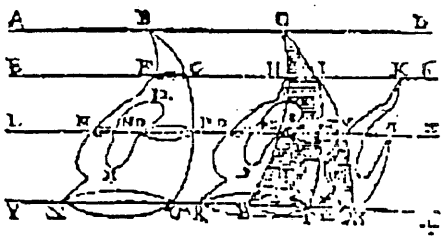


NICHOLAS SAUNDERSON'S "PALPABLE ARITHMETIC"

(see page 2)



Canadian Society for History and Philosophy of Mathematics

Société canadienne d'histoire et de philosophie des mathématiques

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Ed Barbeau winner of CMS Pouliot Award

The Canadian Mathematical Society has named Ed Barbeau of the University of Toronto the first winner of the Adrien Pouliot Award for "contributions to mathematics education". A citation in the CMS *Notes* (Jan.-Feb. '96) says in part that "his contributions are too numerous to name, but those who are involved with [mathematics] competitions have worked with Ed, those who attend Ontario mathematics teachers' conferences have met and been inspired by Ed, those who read the U of T alumni magazine will have spent time on his puzzle corner, those who have tuned in to the CBC Radio series *Ideas* will have heard Ed, and so on and so on, Ed is everywhere! ... CMS is proud to associate itself with the mathematics-education tradition established by Ed". Congratulations!

Spanish translation of Gauss's *Disquisitiones*

A Spanish edition of Gauss's *Disquisitiones arithmeticae* was published at the end of 1995 by the Academia Colombiana de Ciencias Exactas, Fisicas y Naturales. The translation was made by Hugo Barrantes, Michael Josephy and Angel Ruiz, all professors of mathematics at the University of Costa Rica, San Jose. It includes an extensive introduction and a modern table of contents. Further information can be obtained from Michael Josephy (josephy@cariari.ucr.ac.cr).

Monthly now seeking history-of-math articles

The *American Mathematical Monthly* is now actively soliciting articles in the history of mathematics. The editor, Roger Horn, is thinking in terms of one history article per issue. Manuscripts should be sent to him at Department of Mathematics, University of Utah, Salt Lake City, Utah 84112, USA.

COVER

"Palpable arithmetic"

The cover illustration is by courtesy of Jim Tattersall, who writes:

Nicholas Saunderson (1682-1739), the blind Lucasian professor of mathematics at Cambridge, devised as a youth a "palpable arithmetic" to help his father, an exciseman. The board was about one square foot in area and was divided by thin strips of wood into 100 smaller squares. Each small square had a hole in its centre and eight holes on its perimeter. Saunderson used small- and large-headed pins to represent numbers; for example, 0 was represented by a large-headed pin in the centre hole and 2 by a large-headed pin in the centre and a small-headed one directly above it ("Fig. I"). Saunderson became extremely adept at using this abacus-like invention to perform arithmetical calculations. This was among the first steps toward progress in the education of the blind. (See also my paper in *Historia Mathematica* 19 (1992), 356-70.)

WEB SITE OF THE SEMESTER

The Galileo Project, Rice University

Glen Van Brummelen

How many of us had heard of the World Wide Web only three years ago? The ways in which we go about obtaining and disseminating information are being redefined at a dizzying rate by the popularity of the Internet. In each issue of the *Bulletin*, I shall highlight a Web site that uses this new medium to promote the history and philosophy of mathematics and of science in an interesting way. I shall look for

* high-quality scholarship
* effective use of hypertext and other Web innovations
* helpful guides to further research and exploration
* accessible popularizations and interactive preparations

After all, the Web is meant to make knowledge accessible to everyone, not just the elite few.

The **CSHPM's own WWW site** has been operational for several months, and contains links to a number of sites related to the history and philosophy of mathematics (as well as information about the Society itself). It would never be featured as my "Site of the Semester", since it consists mostly of links to other sites. It does, however, provide a good starting point for Web searches. For general information and jumping-off points, begin by linking either to the **St Andrews History of Mathematics archive** (on which see the *Bulletin* of November, 1995) or to **David Joyce's history-of-mathematics site**. Both can be accessed from the CSHPM site at

http://www.kingsu.ab.ca/~glen/cshpm/home.htm.

In this issue I feature **The Galileo Project, Rice University**, whose address is

http://es.rice.edu/ES/humsoc/Galileo/index.html.

Constructed by Dr. Albert Van Helden and associates, the Galileo Project embodies what the World Wide Web aspires to be, and in particular is a model for sites in the history of science. Concentrating on Galileo's life, work and cultural surroundings, the Project is certain to capture a browser's attention for more than a quick "hop". From the home page, one can choose among four ways to explore Galileo's world:

* *Galileo's Villa.* A "memory palace" of the great scientist's life and work. Individual "rooms" in the villa contain biographical information, accounts of his research, descriptions of his instruments, and details of the Inquisition, among other things. The "Student Projects" link contains some interesting work done by students in Dr. Van Helden's Galileo course at Rice University.

* *Galileo Project Resources.* A list of networked and more conventional sources on Galileo, as well as a database of over 600 individuals in science in the 16th and 17th centuries.

* *Timelines of Galileo's Life and Era.* This detailed timeline provides many links to other parts of the Galileo database.

* *Maps of Galileo's World.* This section was still incomplete at the time of this review. It contains several maps; some are clickable to produce images of important landmarks or links to the Galileo timeline.

The information at this site, produced by leaders in the field, is thorough and of high quality. It is richly presented, and makes good use of the medium -- it is not just a book in electronic form. The references are substantial, allowing much room for further exploration of certain topics. Best of all, it is accessible to scholars and students alike. Be sure to commit more than just a few minutes when visiting the Galileo Project.

Suggestions for Web sites to feature in upcoming issues are welcome. Send them to Glen at The King's University College, 9125-50 Street, Edmonton, AB T6B 2H3 (Canada), gvanbrum@kingsu.ab.ca.

Deaths

We record with regret the passing of Dr A.K. Ray of the Fundamental Research Institute, Ottawa. Dr Ray gave at the annual meetings several presentations which will be remembered for their remarkable breadth of vision and originality of approach.

New members

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

Edward Alexander, 2929 East Sixth Street, Apt. 242, Tucson, AZ 85716-4832, USA

Alec Julien, 7979 Riggs Road, Apt. 12, Adelphi, MD 20783, USA

Angus Kerr-Lawson, 137 Albert Street, Waterloo, Ont. N2L 3T2

Charles Lindsey, Department of Mathematics, University of South Florida, 8111 College Parkway, Fort Meyers, FL 33919-5163, USA

Karen Parshall, Department of Mathematics, Mathematics-Astronomy Building, University of Virginia, Charlottesville, VA 22903-3199, USA

Paul Rusnock, Department of Philosophy, University of Waterloo, Waterloo, Ont. N2L 3G1

Katrin Schraegle, P.O. Box 36 07, D-49026, Osnabrueck, Germany

Thomas Schraegle, P.O. Box 36 07, D-49026, Osnabrueck, Germany

Gary S. Stoudt, Department of Mathematics, Stright Hall, Indiana University of Pennsylvania, Indiana, PA 15705, USA

The Society's WWW site (URL on page 3 above) has a directory of members' e-mail addresses.

Jahrbuch database compilation under way; volunteers needed

The editors-in-chief of *Mathematical Reviews*, Keith Dennis, and of *Zentralblatt für Mathematik*, Bernd Wagner, have agreed to cooperate on the making of a database version of the *Jahrbuch über die Fortschritte der Mathematik*. Rights to the *Jahrbuch*'s data have been granted by its publisher, Walter de Gruyter & Co. The project has been endorsed by the Board of Trustees of the American Mathematical Society and the Executive Committee of the European Mathematical Society. The technical and scientific work will be carried out at the editorial offices of the two journals, but most of the funding must be external.

The scientific enhancement of the *Jahrbuch* will depend on support from many volunteers. This short description of the project is intended to motivate research mathematicians to join the planned board of associate editors. The tasks of these editors are discussed below.

An electronic version of the *Jahrbuch* will address the increasing need of mathematicians and historians of mathematics for quick and convenient ways to search the literature. The aim is to produce from the *Jahrbuch* a searchable database covering the mathematical literature which appeared between 1868 and 1942. Each of the 75 *Jahrbuch* volumes produced during this period covers almost all of its year's mathematical research; the total number of publications covered is estimated at 220,000. Thus the projected database would be an important tool both for mathematical research and for the history of science. Together with the databases "MATH" (based on the *Zentralblatt*, published by the Fachinformations-zentrum Karlsruhe) and "Mathsci" (based on *Mathematical Reviews*, published by the American Mathematical Society, it would make available an almost complete record of the published mathematical literature from 1868 to the present. An offline database will be provided in the form of a CD-ROM, in addition to the online service.

The *Jahrbuch* database will be structured like the two existing databases, mentioned above. The experience gained in the compilation of those predecessors will be used in the new project. In the first phase, the *Jahrbuch* material will be entered in tagged fields representing respectively author, title, volume, paging, subject, review text and reviewer. This work, which can be viewed as mechanical, will then be supplemented by intellectual review, so that the final product is a high-quality searchable database.

The project's first stage will be to store the data electronically as they appear in the *Jahrbuch*. The problem of the funding of this first stage is open, but some funds are already available for the input of data. The next stage will be to ask the associate editors to provide additional data for the

individual items by classifying the articles according to the current Mathematics Subject Classification (MSC) scheme, assigning free keywords (in English) to supplement the classification, translating titles, and (if possible) adding comments. To minimize costs, it is hoped that this work can be done by volunteers. In many cases it will be a difficult task to provide correct links between the articles reviewed in the *Jahrbuch* and modern subject classification. Hence a widely diverse board of associate editors, drawn from the ranks of research mathematicians world-wide, will be needed.

Those who are interested in serving as associate editors are asked to contact one of the following:

R. Keith Dennis, *Mathematical Reviews*, 416 Fourth Street, P.O. Box 8604, Ann Arbor, MI 48107-8604, USA, rkd@math.ams.org

Bernd Wegner, Fachbereich Mathematik, TU Berlin, Strasse des 17. Juni 135, D - 10623 Berlin, Germany, wegner@ math.tu-berlin.de

Gödel conference

An international conference called "Logical Foundations of Mathematics, Computer Science and Physics: Kurt Gödel's Legacy" will be held in Brno, Czech Republic (Gödel's birthplace) from August 25 to 29. The aim is to celebrate the 90th anniversary of Gödel's birth by providing a forum for papers on foundational aspects of logic in mathematics, computer science, philosophy and physics -- areas influenced by Gödel's work. A special session will honour Professor Hao Wang, one of Gödel's closest collaborators, who died on May 13, 1995.

The conference is organized by Masaryk University, in cooperation with the Institute of Computer Science of the Academy of Sciences of the Czech Republic and the international Kurt Gödel Society. Information is available from the organizing committee's chair, Jiri Zlatuska, at Faculty of Informatics, Masaryk University, Botanika 68a, CZ-602 00 Brno, Czech Republic, goedel96@informatics.muni.cz, and at http://www.fi.muni.cz/~zlatuska/ goedel96.html.

History of mathematics at Orlando meetings

At the joint AMS/MAA meetings in Orlando, Florida this past January, a special session in the history of mathematics was organized by CSHPM members Tom Archibald and Victor Katz. Speakers included other CSHPM members Alejandro Garciadiego, Israel Kleiner, Erwin Kreyszig and Jim Tattersall. A similar session planned for next year will be organized by Jim Tattersall and Karen Parshall.

Another session at Orlando featured presentations by individuals who last summer completed the first part of the program offered by the NSF-sponsored Institute in the History of Mathematics and its Use in Teaching at The American University in Washington, D.C. Congratulations are due to the Institute's organizers, Victor Katz and Fred Rickey, for this important initiative.

PROFILE: ABE SHENITZER

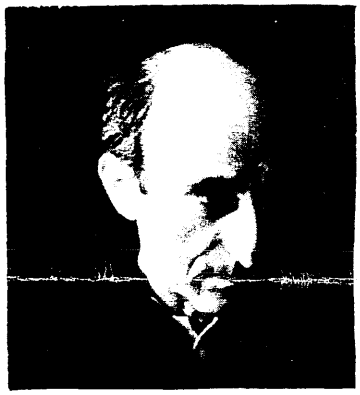
Memories of an education in mathematics

Longtime CSHPM member Abe Shenitzer turned 75 this year and, to celebrate, a conference in his honour will be held in October. Details of the conference follow this article, in which Abe sets down for the Bulletin, *by request, some recollections and reflections.*

I was born in Warsaw but grew up in Sosnowiec, an industrial city then in south-western Poland. A prewar European high school gave at least some of the students a taste of matters intellectual. The language of instruction in my Gymnasium was Polish, but I also learned Hebrew, Latin and German. The literary component of Hebrew was significant from the beginning -- entering students were supposed to know the basics. After a year and a half of Latin we read Caesar, then Cicero, then Ovid and Vergil, and but for the outbreak of the war I would have gone on to "bigger and better things". It took somewhat longer to get to reading substantial German materials, and as the relations between Poland and Germany deteriorated English began to look like an attractive alternative to German. I began its study on my own.

In those days I liked mathematics but I didn't get much of an idea of its significance. I did get some vague notion of the axiomatic basis of geometry. I imagine that readers may be surprised to learn that the authors of my first high-school algebra book were Banach, Stożek and Sierpinski.

In 1947 I took the entrance examination to Brooklyn College. This was a five-hour written exam, whose cutoff score was 80%; my score was 83. What saved me was my ability to solve problems such as: "If 3/4 of a pound of bread costs 23 1/2 cents, how many pounds of bread can you buy for $6.25?" My score on the English part of



the exam was 10%, because I largely ignored the part that asked me to correct the spelling of 50 words. At a midyear conference my advisor was far from pleased with that 10% -- and was positively speechless when I told him that my midyear grade in English was A.

I found physics, my first major, conceptually profound but also extremely difficult, and I reluctantly but wisely switched to mathematics. There I did well in the sense that I mastered the techniques of the calculus and of differential equations, but I could not defend these subjects in intellectual or utilitarian terms. (The fraction of mathematics I used in my

physics courses was trivial.) The point of "Advanced Calculus" eluded me completely, and the same was true -- to an even greater extent -- of linear algebra. In neither of these courses did I seem to be dealing with anything that could be called a "real" problem. I could have learned some of the intellectual rudiments of mathematics in a one-term course on the "nature" of the subject, but this course was widely viewed as a soft option beneath the dignity of serious students.

I gained some sense of mathematical substance by taking a course in complex variables and an informal "quickie" course in differential geometry, and I got at least a vague indication of the intellectual aspects of mathematics by reading Birkhoff and MacLane's *Algebra*.

In 1950 I was admitted to the graduate school at NYU. I was interviewed by Richard Courant -- but luckily I didn't know who he was. He spoke in a low voice and indistinctly, with a marked German accent. He asked me if I knew differential equations. I thought the question a bit silly, and I said I thought that *no* undergraduate knew much about differential equations. Did I know the calculus of variations? I said I knew the name but not the subject. Courant then looked at my file and said, "It states here that you translate mathematics. How well can you do this?" I groped for an answer and finally blurted out, "As well as any student in the United States". "That", said Courant, "is not good enough".

I was certain that Courant would dismiss me, for by my own admission I knew virtually nothing about mathematics. Instead, he said "You applied late" (this was in September) "and we have just $900 left in the Rockefeller Scholarship Fund. If I give you this money, can you manage?" "Yes", I said. "Show me", said Courant. I explained that I had been "adopted" by some kind people. "Next year", said he, "apply sooner".

Then I got to talk to a pleasant man who said his name was Fritz John. We talked about differential geometry, and I told him that I found the dx's and dy's vague. He laughed. "You can learn differential geometry without rigor, just as its creators did, or you can learn rigor without differential geometry." I also talked mathematics with Isaacson. What impressed me about all of these people was that they treated me without any trace of condescension.

Of the many remarkable people I met and befriended at NYU I must single out two. Lipman Bers was my finest mathematics teacher. You can read about him, as a mathematician and as a person, in the five essays under the collective title *Remembering Lipman Bers* which appeared in the *Notices* of the AMS in January 1995 (pp. 8-25). The other was my teacher and friend Wilhelm Magnus, a man of towering intellect and wonderful kindness. You can read about him in my essay "In memory of my friend Wilhelm Magnus", which appeared in *The Mathematical Intelligencer*, vol. 17, number 2, 1995 (pp 63-4).

Magnus was both a powerful mathematician and an intellectual par excellence. Conversations with him reinforced my tendency, always latent, to look by

(continued on page 12)

BOOK REVIEW

"Learn from the Masters!"

Learn from the Masters! *Frank Swetz, Otto Bekken, Bengt Johansson and Victor Katz, editors. Mathematical Association of America, 1995. x+303 pp., ISBN 0-88385-703-0. $23.*

Reviewed by Ed Barbeau

"It appears to me that if one wants to make progress in mathematics one should study the masters."

- Niels Henrik Abel (1802-29)

The Norwegian genius Abel lived not far from Kristiaansand, which in 1988 was the site of a post-ICME conference on the history of mathematics attended by a score of invitees. For a week, participants exchanged ideas on how the history of mathematics can enrich the curriculum and make mathematics more vital and accessible to the learner.

This fine collection of essays represents the proceedings of the conference. The papers vary considerably in emphasis and in length. Some deal explicitly with the use of history in the curriculum. Others can be read as handy summaries of major historical developments and as expositions of elegant results from the past. Since the book reflects the specific interests of its nineteen authors, it represents a core sample rather than a mining of historical development. However, both the general reader and the lecturer in search of material can learn a great deal.

Forty years ago, few undergraduates had any inkling of the historical development of mathematics. In the early 1970s, as the start of a reawakening, Ken May persuaded the mathematics department at the University of Toronto to sponsor a sequence of four history courses. As a lecturer in the second of these, on the development of analysis, I tried to present mathematics as conceived by its discoverers and so began to explore the work of the great analysts of the 17th, 18th and 19th centuries. It was a revelation. These men had a different "take" on mathematical discovery and validation, and one could sense the joy and wonder in their writing. There was indeed much to learn from the masters.

What is the mathematics teacher to do with the history of the discipline? One can have straight history courses like the one I taught. But regular courses can also be enriched with units based on the past. Appreciation courses for the nonspecialist can draw profitably on historical material. Finally, and perhaps best of all, an erudite lecturer can weave the work of the past into the fabric of standard material to illuminate what the student is learning.

The writers of the essays under review address these different aspects, especially the first two. Shmuel Avital exhorts us to find in the past a guide to the difficulties inherent in studying mathematics and strategies for tackling them in the classroom. Ancient questions can motivate

pupils and reveal the emotional and cultural side of mathematics. Michel Helfgott, Israel Kleiner, Man-Keung Siu and Abe Shenitzer outline courses which they offer -- among them, on three continents. Helfgott, inspired by the genetic method of Otto Toeplitz, draws on the past to elucidate the deep concepts of elementary calculus and to provide a balance between intuition and proof. Similarly, Kleiner applies this approach to abstract algebra, using key problems to motivate the material. Siu uses case studies, illustrated here by Euler's treatment of the Königsberg bridge problem, while Shenitzer treats broader themes, such as the evolution of the number system.. These authors suggest resources to help the reader get started on a similar venture.

Several papers provide useful background to help the reader understand the issues in some main area and to delve into the literature. Siu's article on the function concept and Victor Katz's article on linear algebra fall into this category. Others are more restricted in scope. Jan van Maanen describes how, in 1355, the Italian jurist Bartolus (1313-57) enunciated the principle that accretions of land due to alluvial deposits belong to the nearest landowner, and gave mathematical procedures for the practical determination of ownership; the second part of his paper deals with mechanical constructions of conic sections in the 17th century. Frank Swetz draws in part upon Chinese and Near Eastern sources in two papers, one on geometrical problems for the classroom and the other on mensuration problems that established trigonometry as a useful discipline.

Joel Lehmann uses the history of series summation to make some points about the ability of the learner to encompass increasing abstraction. He sees a progression through four levels, from dealing with an isolated concrete problem to an understanding of underlying structure that allows confident handling of a wide category of situations.

An engaging article by Frederick Rickey describes how he used historical examples to enliven his calculus classes. He tells us enough to let us enjoy the mathematics and adapt it for our own purposes. What student can read the following extract from a letter of Jean Bernouilli and fail to appreciate the passion of mathematical research? Bernouilli had been struggling with the shape assumed by a chain suspended from both ends.

> ... but the next morning, filled with joy, I ran to my brother who was still struggling miserably ... Stop! Stop! I say to him, don't torture yourself any more to try to prove the identity of the catenary with the parabola, since it is entirely false.

Other topics -- logarithms, vectors, infinity, centrifugal force -- are treated in this volume. Many articles have endnotes ("for further consideration"), exercises and reference lists. In a category of its own is a thought-provoking analysis by Anthony Gardiner on the presentation of group theory to novices, a history not so much of mathematics as of mathematical exposition. He finds that while many authors recognize the difficult task for students of entering into the abstraction of group theory, almost no one has found an alternative to "adopting, right from the outset, a cold-blooded axiomatic approach". On its own in offering enlightenment to the reader is a marvellous book published in 1972 by Frank R. Budden and now deplorably out of

print. Perhaps the only solution is to make sure that students in schools get lots of practice analyzing the symmetry of geometrical configurations, working with modular arithmetic (parity, clock arithmetic, casting out nines), and manipulating permutations and other functions, so that they come to college with a stock of examples that can inform the axioms for a group. It is difficult to teach abstraction to those not already sensitive to structure.

An additional role of history is to cast light on present mathematical development. Mathematics continues to grow and investigators are still struggling for the most productive formulation of concepts. Those of chaotic behaviour and dimension in the study of dynamical systems come to mind. In this way, we are not much different from our predecessors who struggled with notions of continuity, integrability and compactness.

This is the fourth in a series of "Classroom Resource Materials" intended to provide "supplementary material for students and their teachers". The Mathematical Association is to be commended for publishing this pleasurable and useful volume.

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"The thought of the Differential Calculus warms my feet in bed."

-- A.F. Pollard

Items of interest

Tom Archibald

* will give the plenary talk at the education session of the Canadian Mathematical Society's meeting in Calgary this summer (the session will be on the uses of history of mathematics in the undergraduate curriculum)
* will speak in a session on the history of mathematics at a joint meeting of the AMS with the Benelux mathematical societies in Antwerp this spring
* will publish in *Primus* a paper on "historical and mathematical aims in the use of original sources"
* will contribute to an undergraduate-level history of analysis, to be edited by Niels Jahnke

Len Berggren

* has introduced at Simon Fraser University (in Burnaby, B.C.) an upper-level history-of-mathematics course directed at mathematics majors and minors
* is working on a review of the last decade's literature in the history of mathematics in medieval Islam
* with Robert Thomas, will publish this year *Euclid's* Phaenomena*: A Hellenistic Treatise on Astronomy*
* with Alex Jones, is working on a translation of parts of Ptolemy's *Geography*
* will publish in *Centaurus* "Didactical remarks on some theorems of Archimedes", with A. Aaboe
* will publish in *Centaurus* "Al-Kuhi's 'Filling a lacuna in Book II of Archimedes' in the recension of Nasir al-Din al-Tusi"

I.C. Chakravartty

* spoke on "Mathematics in ancient and medieval India" at a conference on "Challenge and change: the Indian diaspora in its

historical and contemporary contexts", University of West Indies, Trinidad, August, 1995

Craig Fraser
* will contribute to an undergraduate-level history of analysis, to be edited by Niels Jahnke

Alex Jones
* with Len Berggren, is working on a translation of parts of Ptolemy's *Geography*

Greg Moore
* published "The axiomatization of linear algebra: 1875-1940", *Historia Mathematica* 22 (1995)
* published "The origins of Russell's paradox: Russell, Couturat, and the antimony of infinite number", in Jaakko Hintikka, ed., *From Dedekind to Gödel: Essays on the Development of the Foundations of Mathematics* (Kluwer, 1995)

Robert Thomas
* with Len Berggren, will publish this year *Euclid's* Phaenomena: *A Hellenistic Treatise on Astronomy*

Glen Van Brummelen
* will publish in *Historia Mathematica* an article on Kushyar ibn Labban's tables of planetary motion
* has written, with Joe May, a lab manual for "reform"-oriented calculus courses; it was published earlier this year by Saunders. Glen contributed a number of historical episodes (sample titles: "Thomas Malthus' 'utterly dismal theorem' and the hungry nation of Farlandia"; "Pierre de Fermat and the area problem"; "Johannes Kepler versus the wine merchant"). To request an examination copy, please contact Glen (address on page 4 above).

Abe Shenitzer

(continued from page 8)

preference at the intellectual aspects of mathematics as opposed to the purely technical. A kind of down-to-earth description of my position appears in a note that prefaced the first instalment of the column "The Evolution of ... ", which I have edited for the *American Mathematical Monthly* since January 1994:

An English major may or may not be a novelist or a poet, but would undoubtedly be expected to evaluate a novel or a poem. The term "English major" implies some historical, philosophical and evaluative training and competence. It is sad but true that the term "mathematician" does not imply corresponding training and competence.

Integration of the narrowly mathematical and historical, philosophical aspects of our discipline is bound to make it more meaningful not only to those who identify themselves as mathematicians but also to those who have no more than a tangential interest in the subject.

The conference in Abe's honour, entitled "Mathematics and its History", will be held at York University, Toronto, on Saturday, October 5. There will be five one-hour talks; the speakers will be Ed Barbeau, Harold Edwards, Peter Hilton, Walter Littman and Helena Pycior. Updated information is available at http://www.math.yorku.ca/Conferences/Shenitzer. The organizers are Israel Kleiner (kleiner@yorku.ca) and Martin Muldoon (muldoon@mathstat.yorku.ca), both at Department of Mathematics and Statistics, York University, 4700 Keele Street, North York, Ont. M3J 1P3 (Canada). Anyone who plans to attend would earn the thanks of the organizers with a short note to that effect.