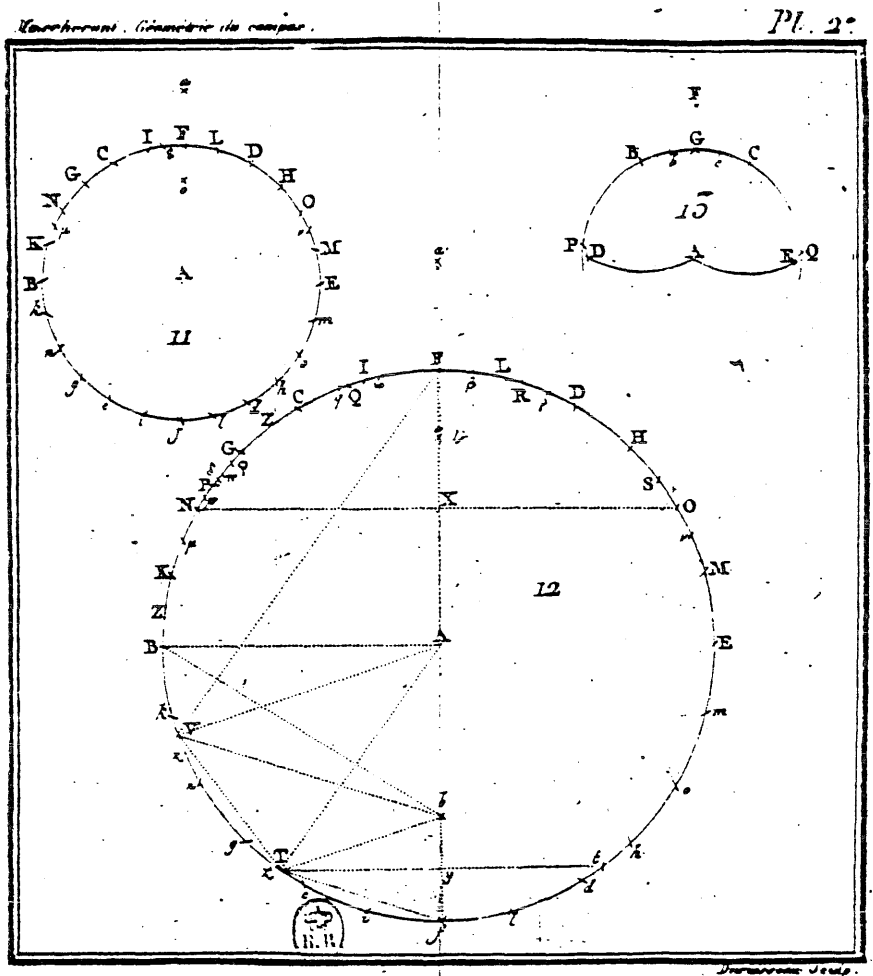


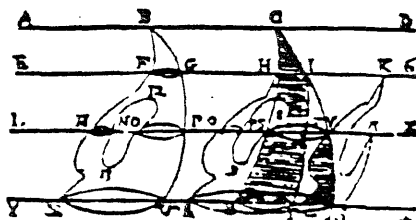
# BULLETIN CSHPM/SCHPM



Mascheroni's compass only construction of a pentagon

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

The Bulletin is an informal medium whose aim is to inform members of the CSHPM\SCHPM, and others interested in the history and philosophy of mathematics, of happenings, meetings, current research work, publications etc. and to provide a place where one can present tidbits, historical problems, quotations etc. which do not find a place in more formal media.

Material should be sent to :

Roger Herz-Fischler, Department of Mathematics and Statistics,  
Carleton University, Ottawa, Ontario, K1S-5B6.  
home tel. (613) 563-0350; office (613) 564-6781 (5500 secretary).

The preferred method is via electronic mail because it renders retyping unnecessary and avoids mail delays of up to plus infinity. Electronic mail address: <ROGERH-F@CARLETON.NETNORTH>. The second best method is to send an IBM compatible diskette (unformatted = ASCII), via the mail. The mention of these methods should not however discourage those writing with quill and ink, à la Babylonian or by other methods. It would be appreciated if those submitting more than simple news items would send it them in final typed form so that the text can be reproduced as is.

#### CSHPM/SCHPM

The society is international in outlook and membership. Its purpose is to unite scholars who are interested in the history and philosophy of mathematics.

Annual dues are \$15 (\$US 11).

If a subscription to Historia Mathematica (the official journal of the society) is desired the additional cost is \$29.50 (\$US 22) i.e. a total of \$44.50 (\$US 33). A subscription to Historia Mathematica via CSHPM represents a considerable saving over the usual cost.

Remittances should be sent to: M.A. Malik, Department of Mathematics, Concordia University, 7141 Sherbrooke Ouest, Montréal, Québec, H4B-1R6; tel. (514)848-3232; electronic mail: <MAMALIK@CONU1.NETNORTH>. Kindly include your electronic mail address if you have one.

#### Annual Meeting

The next annual meeting will be held at Université Laval. The tentative dates as of this writing are May 29,30 1989. There will be a special session on:

Eighteenth Century Mathematics.

The invited speaker is:

Joan L. Richards, Department of History, Brown University

"Rigor and Revolution"

Professor Richards is well-known for her work on the history of geometry, analysis and algebra in the late 18th and 19th centuries. Her talk will deal "... in part with the broader intellectual context in which interest in making rigor the defining trait of mathematics developed."

Persons (non-members as well as members are invited) wishing to speak at this the special session should contact: Craig Fraser, IHPTS, Victoria College, University of Toronto, Ontario, M3J 1P3 as soon as possible.

There will also a general session. Please contact Roland Eddy, Department of Mathematics, Memorial University, St. John's, Newfoundland, A1C 5S7; electronic mail <REDDY@MUN.BITNET>. It is requested that abstracts be submitted by February 28.

Since the meeting will take place in Québec readers might be interested in the article "Quebec: Our City of World Heritage Renown" that appeared in Canadian Geographic, Dec./Jan. 1988.

COVER

The plate is taken from the 1798 French translation of Mascheroni's 1797 Geometria del compasso (publishers seem to have been quicker in having a "sure thing" translated and published). It is now known that Mascheroni's work on construction with a variable compass was predated by that of the Danish mathematician G. Mohr (1640-1697) in a "lost" 1672 work which bore the title Euclides Danicus. Leibniz once referred to Mohr as "Georgius Mohr Danus in Geometria et Analysisi versatissimus." For a discussion of Mohr see A. Hallerberg, "Georg Mohr and Euclidis Curiosus", The Mathematics Teacher, February 1960, 127-132. The works of Mohr and Mascheroni are compared in A. Seidenberg, "Mascheroni", Dict. Sci. Biog., 9, 156-158.

CURRENT WORK AND INTERESTS

Victor J. Katz is professor of mathematics at the University of the District of Columbia in Washington, D.C.. He is a member of the council of the CSHPM and is a regular speaker at our annual meeting. Last year gave a very interesting paper entitled "Why Not Trigonometry?" in which he pointed out that contrary to what one might expect trigonometry was not used until relatively recently to measure planar distances, even by mathematicians, e.g. al-Biruni, who were familiar with it!

"I received my Ph.D. from Brandeis University in 1968 with a dissertation in the field of Algebraic Number Theory. But I had always been interested in the history of mathematics. In fact, I wrote a Junior Paper at Princeton University on the relationships between Euclid's Books V and VII and modern concepts of the real numbers. In the summer of 1972, I attended a six week workshop on the history of mathematics sponsored by the National Science Foundation. I then decided to try some research in history myself. Having read in Eric Temple Bell's Development of Mathematics that an entire chapter could be written on the history of Stokes' Theorem, I decided to try to write that chapter. The article dealing with the history of Stokes' Theorem finally appeared some years later in Mathematics Magazine.

In 1978-79, I spent a sabbatical year at the University of Toronto's Institute for the History and Philosophy of Science and Technology. It was there that I met many of the people involved in the CSHPM and learned much about doing research in the history of mathematics. Two long papers on the history of differential forms came out of that year, as well as ideas for a few briefer ones.

But since I was teaching at a primarily undergraduate institution, I became interested not only in the history of mathematics as such, but also in the ways it would be useful in improving my teaching and in helping to excite the students to learn mathematics. So for a number of years I collected various examples of historical approaches to topics in the undergraduate curriculum and experimented with them in the classroom. After attending a summer workshop in 1983 again in Toronto dealing with the use of history in teaching mathematics, I decided to try to organize some of my material into a complete course using an historical approach. I was able to do this to some extent both for a precalculus course and for a first semester calculus course. But the constraints of teaching in a large university with several sections of every course - and thus the necessity of covering the same syllabus in each section - prevented me from using the historical approach as much as I wanted to. So I decided that I would spend my sabbatical of 1985-86 writing a precalculus text in which the not only the individual topics but also the entire organization of the course was historical. It seemed to me that the reorganization of the course that this entailed made the course a better one and enabled the students to see connections and relationships they could not see in the standard approach.

Unfortunately, though I sent versions of several chapters of my proposed text to various publishers, I always received the same answer: "It is a very interesting approach to the material, but it is so different from the current texts that we do not want to take the risk of publishing it." One of the publishers, however, asked me if I would write instead a history of mathematics textbook which could incorporate me of this material. I ulti-

mately agreed and am now in the process of writing such a text. It will be different from the three current undergraduate texts in the history of mathematics in its emphasis; in particular, since many of the students taking such a course are prospective teachers, the text will present many examples of how the history of mathematics can be used in the classroom. With some luck - and a lot of work - the book will be finished sometime in 1989.

Meanwhile, I have also agreed to be the new editor of the Newsletter of the International Study Group on the Relations Between History and Pedagogy of Mathematics. Since many of the readers of this Bulletin are also on the mailing list of the newsletter, I will take this opportunity to solicit news and articles relating to the use of history in the teaching of mathematics.

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Len Berggren, the president of the CSHPM/SCHPM, attended the October meeting of the Canadian Federation of Humanities. He provided the following report:

"The Canadian Federation for the Humanities (CFH) is an umbrella organization for about 35 Canadian learned societies with special interest in the humanities. Each organization has a representative on the Board of Directors, and I have just taken over from Wesley Stevens as the representative of CSHPM/SCHPM.

"The CFH receives its funding from the Social Sciences Research Council of Canada (SSHRC) in order that it might:

- (1) Keep its member organizations informed of various initiatives of government (particularly SSHRC) relating to research in the humanities,
- (2) Coordinate the responses of its member organizations to government initiatives in the humanities and inform government of these responses, and
- (3) Lobby the government for more support for the humanities.

"CFH holds meetings of its Board thrice yearly, in October and January in Ottawa and in June at the Learned's. Since the October meeting (held all day on Oct. 21), which included items affecting scholarly publishing, employment of new Ph.D.'s and support of research, has just finished, this seems an appropriate time to tell you some of the main items considered.

"During the morning session the Board discussed CFH's programme of aid to scholarly publishing. The Board approved a motion asking the staff of CFH to prepare a brief requesting SSHRC to subsidize scholarly publications on the basis of selling 80% of run (rather than 85% of run as at present) and to provide a special budget of \$1,500 per book to help publicize scholarly books.

"One of the major agenda items was the various policies of SSHRC. To begin, the President of the CFH (Tom Robinson/Toronto) said that both of CFH's initial contacts with SSHRC's new president, Dr. Paule Leduc, have created the impression that she is a person eager to maintain good relations with CFH and willing to make a considerable effort to understand the problems of the humanities in Canada.

"Present at the meeting to make a report was Ms. H. Steele, Director of Fellowships for SSHRC, who reported on the review presently underway of the Canada Research Fellowships Programme. Under this programme, the "brightest and best" of the new Ph.D.'s in the areas SSHRC supports are given five year appointments at Canadian universities, with half of their salaries being paid by SSHRC. Unlike the corresponding NSERC programme, there is no expectation that Research Fellows will be ultimately phased in to the tenure stream, and this has occasioned some criticism of the program, but on the whole both the universities and the Fellows were happy with it so far.

"Prof. F. Duchesneau reported on a key area of concern, the rules according to which the 1600 applications in support of research that SSHRC receives yearly will be adjudicated. The revision of these rules based on the Crocker report has created considerable controversy, so SSHRC has set up the Courtney Committee to consider revisions to the Crocker Report. (CSHPM/SCHPM has recently submitted a brief on this.) One eminently sensible change to the rules being contemplated is that researchers in the humanities will not be expected to spell out what they expect the results of their research will be before they have begun the research. There will be an increasing tendency, in cases where this is appropriate, to award research support on the basis of the researcher's record rather than on the basis of an assessment of the proposal. (A projected move to programme-based funding rather than project-based funding sounds like one in the direction of NSERC's operating grant approach, but we must wait and see.)

"By its Strategic Grant programme SSHRC sets aside 14% of its budget either for support of research in "theme areas" (such as Aging Population, Women and Work and The Human Context of Science and Technology) or the development of a research infrastructure (archives, special collections, etc.) in areas of special concern to modern Canadian society. This is not a popular programme with the humanists, who see no way that their own research can tap into this part of SSHRC's resources, and so they see it as SSHRC simply earmarking a fraction of its budget for research in the social sciences. There was considerable discussion on how to remedy this situation, and CFH will, on the basis of this discussion, present a major brief to SSHRC.

"If you are interested in more information on the CFH write to me or to Mme. Viviane Launay, Executive Director, CFH, 151 Slater, Suite 407, Ottawa, Ontario K1P 5H3."

interest and activity in history of mathematics, especially in Beijing, Huhehot (Inner Mongolia) and Shanghai.

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# *ARCHIVES INTERNATIONALES D'HISTOIRE DES SCIENCES*

*rédacteur en chef :*  
*Pr. R. Halleux*  
*32, Place du XX Août*  
*B-4000 LIEGE*  
*BELGIQUE*  
*Tél. : (41) 42.00.80*

Les Archives internationales d'histoire des sciences sont l'organe de l'Académie internationale d'histoire des sciences. Comme telles, elles ont succédé à l'illustre Archeion fondé par Aldo Mieli. L'éditeur commercial est l'Istituto della enciclopedia italiana, piazza Paqanica, 4, I-00186 Roma. Le rédacteur en chef est le Professeur Robert Halleux, place du XX Août, 32, B-4000 Liège, Belgique. Le Comité de rédaction est constitué des Professeurs Pierre Costabel, France, Robert Fox, Angleterre, Semion R. Mikulinsky, URSS, John Murdoch, USA, Juliò Samsò, Espagne, Christoph Scriba, RFA, et Juan Vernet, Espagne.

Deux fois par an, en juin et en décembre, les Archives publient, sans limitation du nombre de pages, des articles du plus haut niveau, des informations diverses et une bibliographie critique internationale. Les langues de travail sont l'anglais, le français, l'italien, l'espagnol, l'allemand et le russe. A la différence d'autres revues, nationales ou spécialisées, les Archives ont une vocation internationale et interdisciplinaire. Leur but est de refléter l'état le plus récent de la discipline dans toutes ses facettes et toutes ses connexions notamment avec les autres sciences humaines. Les Archives tirent à deux mille exemplaires qui sont pour la plupart souscrits par les bibliothèques scientifiques du monde entier.

Pour tout ce qui concerne la gestion scientifique de la revue, il convient de s'adresser au rédacteur en chef. Pour les abonnements, la publicité et les autres matières financières, on s'adressera à l'éditeur commercial.

## PUBLICATIONS

Anellis, Irving. "The Heritage of S.A. Janovskaja", History and Philosophy of Logic, 8(1987), 45-56.

Ascher, Marcia. "Graphs in Cultures: A Study in Ethnomathematics", Historia Mathematica, 15(1988), 201-227.

Artmann, Benno. "Über voreuklidische 'Elemente der Raumgeometrie' aus der Schule des Eudoxus", Preprint Nr. 1098, November 1987, Technische Hochschule Darmstadt, D-6100 Darmstadt, Schlossgartenstrasse 7, FRG. [This article has a very interesting drawing entitled "Castrum Euclidii" in which the castle (Euclid's Elements) is divided into sections according to concepts etc. e.g. X,1 is the "inexhaustible well" and the ruins of Anthypharesis lie on the outside!]

Berggren, Len. "Spherical Trigonometry in Kūshyār ibn Labbān's 'Jāmi' Zīj", in From Deferent to Equant: A Volume of Studies in the History of Science in the Ancient and Medieval Near East in Honour of E. S. Kennedy, 15-33. (Annals of the New York Academy of Sciences, vol. 500), New York, The New York Academy of Sciences, 1987

Crowe, Donald & Washburn, Dorothy. Symmetries of Culture / Theory and Practice of Plane Pattern Analysis, Seattle, University of Washington Press, 1988.

Herz-Fischler, Roger. "Theorem XIV, \*\* of the First 'Supplement' to the Elements", Archives Internationales d'Histoire des Sciences, 38(1988), fasc. 120, 3-66.

Høyrup, Jens. "Jordanus de Nemore, 13th Century Mathematical Innovator: an Essay on Intellectual Context, Achievement, and Failure", Archive for History of Exact Sciences, 38(1988), 307-363.

Schubring, Gert. "Historische Begriffentwicklung und Lernprozess aus der Sicht neuerer mathematikdidaktischer Konzeptionen (Fehler, "Obstacles", Transposition)", Zentralblatt für Didaktik der Mathematik, 20(1988), 138-148.

## PERSONAL NEWS

Wesley Stevens (University of Winnipeg) has been appointed to the Canadian National Committee for the International Union for the History and Philosophy of Mathematics by the National Research Council of Canada. He will be the Canadian representative to the IUHPS Division of History of Science at its quadrennial meeting in Hamburg, August 1-9, 1989.

Joe Dauben (City University of New York) has returned from a semester in China. He reports that there is a great deal of



## NEWS/ACTIVITÉS

John Pottage of the Department of History and Philosophy of Science at the University of Melbourne (Parkville, Victoria 3052, Australia) is the author of the very interesting and enlightening book, Geometrical Investigations / Illustrating the Art of Discovery in the Mathematical Field, (Addison-Wesley, 1983). This work contains historical references, including bibliographic details about the original work and modern commentary; historical quotations and dialogues involving characters from Galileo's Two New Sciences. In response to a request he has provided the following information concerning his activities and programmes at the University of Melbourne:

Despite his retirement from teaching history of mathematics course John Pottage is working on mathematical education courses and writing a book on Mathematical from the Liberal Arts Standpoint. As well he is on the reviewing team of Mathematical Gazette. The shift in interest at Melbourne has been away from the history and philosophy of mathematics (with the retirement of John Pottage and another professor) and towards sociology, in particular the sociology of science. Details concerning courses in the history and philosophy of science can be obtained by writing the department at the above address.

## CONFÉRENCES

The executive committee of the International Commission on the History of Mathematics is sponsoring a number of special symposia in conjunction with the the International Congress on History of Science to be held in Hamburg and Munich in August of 1989:

Hamburg, during the Congress: There will be symposia on:

1. "Mathematics and the French Revolution: Decades of Change"
2. "Mathematik und Staat"
3. "Charles Sanders Peirce: 1839-1989"
4. "Historiography and the History of Mathematics"
5. "History, Theory and Practice of Perspective and Modes of Representation"

Additional information about the Congress, or any of the ICHM Symposia, may be obtained by contracting:

Joseph W. Dauben, International Commission on History of Mathematics, Department of History, Herbert H. Lehman College, CUNY, Bedford Park Blvd. West, Bronx, New York 10468 USA  
BITNET: <JDX@CUNYVMS1>

International Symposium on  
Cauchy and the French Mathematical World

This symposium will take place in Paris, July 27-29 just before the ICHS. It will commemorate the bicentennial of both Cauchy and the French Revolution. The Symposium will take place in the new Musée des Sciences in the Cité des Sciences and de l'Industrie. For more details please contact:

Umberto Bottazzini, Università di Bologna, Dipartimento di Matematica, Piazza di Porta San Donato 5, 40127, Bologna, Italy

Jean Dhombres, Département de Mathématiques, 2 chemin de la Hossinière, 44072 Nantes, Cédex, France

Christian Gilain, Laboratoire de Mathématiques Fondamentales, Université Paris VI, Tour 46 3ème étage, 4 Place Jussieu, 75005, Paris, France

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Those who like to plan in advance should note that the 1990 CSHPM\SCHPM meetings at the Learned Societies will be held at the University of Victoria followed by Queens University in Kingston in 1991 and the University of New Brunswick at Fredricton in 1992.

CITATIONS/QUOTES

"Cette femme que son amant reconduisait tous les soirs en lui faisant faire le tour d'une place et qui, s'apercevant un jour qu'il coupait la place au lieu de la tourner, lui dit: 'Je vois bien que votre amour a diminué dans les rapport de la circonférence au diamètre,' exprimait d'une manière très-piquante et très-spirituelle un fait psychologique réel; mais ce n'était évidemment qu'un symbole qui perdrait précisément tout agrément et toute vérité morale, si on l'entendait d'une manière aussi rigoureuse que les lois de Kepler ou les lois de Newton." - Paul Janet, "Les mathématiques et la psychologie", La Revue Philosophique, 5(1878), 308-310.

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"Now there is a demand for mathematics; it helps to build bridges and drive engines, and therefore it becomes somebody's business to study it severely. But to have a philosophy is a matter of luxury; the only use of that is to make us feel comfortable and easy. It is a study for leisure hours; and we want it supplied in an elegant, an agreeable, an interesting form." - Charles Pierce, in E. Moore (ed.), Writings of Charles S. Pierce: A Chronological Edition, Volume 2, 1867-1871, Bloomington, Indiana University Press, 1984; p. 486.

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