BULLETIN
CSHPM/SCHPM

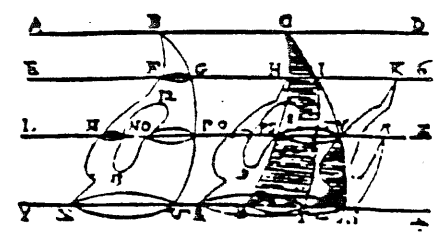The Bulletin is an informal medium whose aim is to inform members of the CSHPM\SCHPM, and others interested in the history and philosophy of mathematics, of happenings, meetings, current research work, publications etc. and to provide a place where one can present tidbits, historical problems, quotations 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.

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, via the mail. The mention of these methods should not however discourage those writing with quill and ink or other methods.

CSHPM/SCHPM

The purpose of the society is to unite scholars within and outside of Canada 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).

Remittances should be sent to: M.A. Malik, Department of Mathematics, Concordia University, 1455 Maisonneuve, Montrèal, Quèbec, H3G-1M8.

ANNUAL MEETING/REUNION ANNUEL

The annual meeting will be held at the University of Windsor on May 28,29 (or 29,30) 1989.

Anyone wishing to speak at the general session should contact: R.H. Eddy, Dept. of Mathematics and Statistics, Memorial University, St. Johns, Newfoundland, A1C-5S7.

SPECIAL SESSION ON VICTORIAN SCIENCE

As part of the annual meeting there will be a special session on Victorian Science. For details please contact:

Francine Abeles, Department of Mathematics, Kean College of New Jersey, Union, New Jersey, USA 07083, tel.(201) 527-2015.

THANKS AND AN APOLOGY

Thanks to Craig Fraser I have been flooded with news, notices of publication etc. I appreciate all the material and I will put it a little at a time. Unfortunately I had to spend all spring and then all summer and autumn working on the copy and proofs of my history of extreme and mean ratio book and then on a calculus book for students of business (with the Maya cover of Bulletin number 2 on the front and lots of history and culture on the inside!). I must apologize for the delay in the appearance of this issue of the Bulletin.

COVER

The cover is taken from the work Kitāb fiqh al-ḥisāb by Ibn Mun'im (early 13th century). The chart shows the number of pom-poms one can make from at most 10 colours of silk when no colour is repeated. For details see J. Berggren, "History of Mathematics in the Islamic World: The Present State of the Art", Middle East Studies Association Bulletin, 19(1985), 9-33.

CURRENT WORK AND INTERESTS

The current vice-president and former president of the CSHPM is Len Berggren an outstanding scholar of Islamic mathematics and astronomy. In addition to being an associate editor of Historia Mathematica, Len has written a book, numerous articles, spoken at many international conferences and received several NSERC and SSHRC grants. Since Len started life as an algebraist our readers may be interested in how his history of mathematics career started and developed.

Around 1970 my colleague Harvey Gerber asked me if I would prepare a course on History of Mathematics which the department could offer as a means of attracting Arts students into some of our courses. I did so and found a host of fascinating questions as I was preparing the lectures. Also, as a result of my marriage to a Cypriot I had learned Modern Greek and (as a sort of hobby) had expanded my study to ancient Greek. The reading I was doing in history of mathematics stimulated me to begin reading ancient Greek mathematical works. and reading these stimulated my interest even further.

"About a year later I was invited to go to a dinner here at SFU for the late Derek Price, who was at SFU to give a lecture on science policy, and after dinner I was talking to Derek about questions I was thinking about as a result of reading Greek mathematics. Derek suggested that I come to Yale and spend a year with Asger Aaboe in the Department of History of Science and Medicine at Yale. It was a very stimulating experience and introduced me not only to the literature on the history of mathematics (and science generally) but also to the profession.

The summer before I went to Yale I met Ken May at a Canadian Mathematical Congress meeting and he was very encouraging. It was quite flattering to be asked to take part in editorial work on the new journal, *Historia Mathematics* that he was organizing. It seems to have been a time when, both in Canada and the U.S. capable, energetic people were actively encouraging young scholars to enter the field of history of mathematics.

"After the year at Yale further research in Vancouver led me to Arabic texts, and a colleague at U.B.C., H. E. Kassis, kindly instructed me in the mysteries of a Semitic language. I was also able to follow up these Arabic studies during a second year at Yale as well as to learn more from Derek, Asger and many other friends there.

"The point of general interest in the above remarks is that I received superb support from my colleagues at S.F.U. for this period of re-tooling, and both SSHRC and NSERC were generous in funding my re-education and my initial research in a new area. My first year at Yale would no doubt have been little more than a pleasant interlude in a career of mathematical research had it not been for the collegial, institutional and financial support that was so generously offered."

"My research is on the history of mathematical methods in antiquity and the middle ages, and rather than try to define 'mathematical methods' I will list some of the projects I am working on.

"One is the history of spherics from the time of Autolycus (4th c. B.C.) to that of Nasr al-Din al-Tusi, where spherics refers to the part of pre-Ptolemaic mathematical astronomy that the later Alexandrian pedagogues collected under the name "The Little Astronomy". My focus in the Greek period is on the relationship betweem the character of spherics as a mathematical theory and the nature of astronomy at the time the science of spherics was being discovered. This part of the research is in final form, and I would be pleased to send a copy to anyone requesting it. In the Islamic period my research is on why the science of spherics survived for so long after it had ceased to be of any importance to the working astronomer. ,Stemming from this is a translation and commentary (with R. Thomas) on Euclid's Phenomena. This is the most elegant of the early treatises in spherics, and there is, to our knowledge, no English translation of the work.

"Another project is a translation and commentary (in conjunction with Dr. A. Jones) on the portions of Ptolemy's Geography that are not simply lists of coordinates. This is related to earlier work I have done on mathematical geography in Islam.

In addition to doing research himself Len is now directing the graduate studies of two students: Pushpa K. Jain is doing a doctorate on the history of mathematics in India and Glen van Brumellen is doing masters level work on the history of mathematics in Islam. Thus there are now two universities in Canada (IHPST at Toronto being the other) where students can do doctoral work in the history of mathematics.

CITATIONS

Personnage pittoresque, original et déjà légendaire de son
vivant, le mathématicien Adrien Pouliot est aujourd'hui considéré
comme un pionnier dans le domaine des sciences au Québec... . A
une époque où on lui objectait souvent que 'les mathématiques,
c'est bien beau, mais ce n'est pas avec cela que vous allez
sauver votre âme', il entreprit courageusement de changer les
mentalités. " - Danielle Ouellet, Adrien Pouliot - Un homme en
avance sur son temps, Boréal, Montréal, 1986, p. i.

"You are surprised at my working simultaneously in literature and
in mathematics. Many people who never had occasion to learn what
mathematics is confuse it with arithmetic and consider it a dry
and arid science. In actual fact it is the science which demands
the utmost imagination. One of the foremost mathematicians of our
century says very justly that it is imnposible to be a
mathematician without also being a poet in spirit. It goes
without saying that to understand the truth of this statement one
must repudiate the old prejudice by which poets are supposed to
fabricate what does not exist, and that imagination is the same
as 'making things up'. It seems to me that the poet must see what
others do not see, must see more deeply than other people. And the
mathematician must do the same. " - Sofya Kovalevskaya, in B.
Stillman (editor), A Russian Childhood, New York, Springer, 1978,
p. 35.

Si quid forte minus aut plus iusto vel necessario intermisi, mihi
deprecor indulgeatur, cum nemo sit qui vitio careat et in omnibus
undique sit circumspectus. (If I have perchance omitted anything
more or less proper or necessary, I beg indulgence, since there
is no one who is blameless and utterly provident in all things) -
Fibonacci (Leonardo Pisano), Liber Abbaci (Book of Calculation),
second edition (1228) in R. Grimm, "The Autobiography of Leonardo
Pisano", Fibonacci Quarterly, 11(1973), 99-104, 162.

" ... in the current state of analysis we may regard these
discussion [of past mathematics] as useless, for they concern
forgotten methods, which have given way to others more simple and
more general. However, such discussions may yet retain some
interest for those who like to follow step by step the progress
of analysis, and to see how simple and general methods are born
from particular questions and indirect procedures" - Jospeh Louis
Lagrange, Leçons du calcul des fonctions , second edition, 1806,
p. 315; cited in C. Fraser, " J. L. Lagrange's Changing Approach
to the Foundation of the Calculus of Variations", Archive for
History of Exact Sciences, 32(1985), 151-191, p. 152.

ANNOUNCEMENTS

La Commission d'Histoire des Mathématiques en Afrique de l'Union
Mathématique Africaine (AMUCHMA) vient de lancer le Bulletin de
l'AMUCHMA. Nous souhaitons bonne chance à nos collègues africains
et les félicitons de l'apparition de cette publication de 21
pages. Le premier numéro contient une liste des conférences,
recherches en cours, publications, cours et annonces. Ceux qui
aimeraient recevoir la version anglaise sont priés de contacter
M. le professeur Paulus Gerdes, Faculté des Sciences
Mathématiques, Université Eduardo Mondlane, C.P. 915, Maputo,
Mozambique, tandis que les versions arabes et françaises sont
disponibles en écrivant au secrétaire, M. le professeur Ahmed
Djebbar, Département de mathématiques, Université Paris-Sud,
91405, France.

The Golden Hind Press, Suite 232, 2490 Black Rock Turnpike,
Fairfield, Conn., USA 06430 specializes in the translation of
older works in mathematics, mathematical physics and logic. They
have started a small revue entitled Hindsight which is available
for free in the USA, $3.00 per year in Canada and Mexico and $10
per year elsewhere. They plan to put out four issues per year.

Membership in the British Society for the History of Mathematics
is available for L7 per year. Please contact the Treasurer,
Professor A.J. Crilly, Department of Mathematics, Middlesex
Polytechnic, Trent Park, Hertfordshire. EN4 OPT, England.
Announcements for the Newsletter should be sent to Dr. Ronald
Gowing, Royal Institution Centre for History of Science and
Technology, 21 Albermarle St., London W1X 4BS.

The University of Minnesota Press has informed us that they have
published the proceedings of a conference held in 1985 which
brought together mathematicians and historians of modern
mathemtics with the aim of examining how the two groups approach
the history of mathematics. The editors are William Aspray and
Philip Kitcher and the collection is entitled: History and
Philosophy of Modern Mathematics.

Paul Campbell and Louise Grinstein have just published Women of
Mathematics:A Biobiliographic Sourcebook, Greenwood Press, 1987.
In addition to biographies of the better known women
mathematicians there are of articles on Käte Fenchel (1905-1983),
Elizaveta Fedorovna Litvinova (1845-1919") and others.

Philosophia Mathematica has started its second series. The rates
(in US dollars) are v.1 $15 [$8 for individuals]; v.2 $25 [$12].
Some back issues of Series I (1964-1981) are still available at
reduced rates. For subscriptions etc. please contact Prof. J.
Fang, O.D.U. (Philosophy Dept.), Norfolk, Va. USA 23508.

Special issues of series 1 were: "Mathematical Existence" (v.11);
"Women in Mathematics" (v. 13/14); "The Politics of Mathematics"
(v.15/16); "The Psychology of Mathematics" (v. 17/18)

The International Union of the History and Philosophy of Science
wishes to compile an inventory of work in progress in the
following categories: Bibliographical tools in the history of
science, critical editions of medical and scientific texts,
catalogues or inventories of scientific manuscripts, translations
of older scientific texts, editions of scientific correspondence.
Anyone who is engaged in any work of this kind is asked to
contact: Dr. F.W.P. Dougherty, Institut für Geschichte der
Medizin, Nikolausberger Weg 7b9, 3400 Goettingen, FRG.

MEETINGS AND SPEAKERS

York University has an ongoing seminar in the "History and
Philosophy of Mathematics and Mathematics Education". For details
contact Israel Kleiner.

Recent and future speakers at the Dickinson College History of
Mathematics seminar have included George Andrews (Penn State) on
Ramanujan, John Dawson (Penn State- York) on Gödel, Victor Katz
(DC) on the Eighteenth Century, Doris Schattschneider on Escher,
Thomas Drucker (Dickinson) on the Poincaré conjecture and Peter
Martin (Dickinson) on the evolution of the lambda calculus. For
details contact Thomas Drucker.

The Latin American Society for the History of Science and
Technology and the Brazilian Society for the History of Science
are sponsoring the second "Congresso Latinoamericano de Historia
da Ciencia e Tecnologia". The congress will be held in Sao Paulo,
Brazil, June 30 to July 4, 1988.
Interested persons should contact: Comissao Organizadora, 2.o
CLA/HCT, Caixa Postal 6063, 13.081 Campinas SP, Brasil.

The fifth "Internationaler Leibniz-Kongress" dealing with
"Leibniz - Tradition und Altualität" will take place in Hannover,
November 14-19, 1988. The congress will consider the historical
position of Leibniz's thought and its importance today. Enquiries
should be sent to: Kongressbüro, Niedersächsische
Landesbibliothek, Waterloostr. 8, D-3000, Hannover, 1, FRG.

On March 19, a symposium in honour of the tercentenary
of Newton's Principia was held at Acadia University. Among the
presentations was one by Tom Archibald on the mathematics of
Newton's Principia, based on Whiteside's studies. On April 27 a
lecture was presented in the Mathematics Department by George
Cross of the University of Waterloo, entitled "Fourier Series and
Integration: An Historical Perspective."

NEWS AND ACTIVITIES

Roger Cooke (Vermont) is studying the history of algebraic function theory in the nineteenth century, specifically the Jacobi inversion problem from its statement to the final solution.

Israel Kleiner (York) is continuing his work in the history of 19th and early 20th century mathematics and particularly on the evolution of abstact algebra.

Irving Anellis (Philosophia Mathematica, 110 McDonald Drive, #8-B Ames, Iowa) is currently writing a History of Mathematical Logic in the Soviet Union, 1917-1980. He would appreciate receiving copies of old notes, (p)reprints, photographs, syllabi, correspondence etc. Especially sought is material by or about Soviet logicians from the period circa 1930-1965. Forwarded material will be gratefully acknowledged and promptly returned.

Francine Abeles (Kean College) gave an invited lecture on Charles Dodgson at the Enoch Pratt Library in Baltimore in April and attended the Tenth International Conference on Artificial Intelligence held in Milan in August.

Louis Charbonneau travaille actuellement à la publication du catalogue des 29 volumes de Joseph Fourier conservés au cabinet des manuscrits de la Bibliothèque Nationale à Paris. Il commence aussi une étude de l'histoire du calcul différentiel et intégral de façon à en faire une relecture visant à réinterpréter celle-ci en termes de primitives phénoménologiques (p-prims de diSiessa adaptées aux mathématiques) et d'obstacles épistémologiques.

Tom Archibald (Acadia) is doing research on the relationship between applied mathematics and pure mathematics, especially as it developed between about 1840 and 1900. At present, this research has two principal lines. One is an investigation of developments in potential theory and related matters in partial DEs and complex analysis, especially in Germany and France. The other is the study of individual mathematicians who were active both in pure mathematics and in applied areas; so far this has involved a study of certain aspects of the work of Pluecker and Riemann.

QUERY

Tom Archibald (Acadia) asks if anyone knows if there is any relationship between the use of barycentric coordinates by Moebius and the almost comtemporary development of Miller indices in crstallography.

PUBLICATIONS

Abeles,Francine. "Power in Decisions Among Multiple Alternatives"
Journal of Information and Optimization Sciences, 5(1984), 43-48.

Berggren,Len. Episodes in the Mathematics of Medieval Islam, New
York, Springer, 1986.

Dawson,John. "The Published Work of Kurt Gödel: An Annotated
Bibliography", Notre Dame Journal of Formal Logic, 24(1983), 255
- 284; 25(1984), 285 - 286. [Both of these articles contain lists
of photographs of Gödel]

Closs,Michael. "Venus Dates Revisted", Archaeoastronomy, 4(1981),
38-41.

Drucker, Thomas. "Victorian Mathematics" in Encyclopedia of
Victorian Britain, Garland, forthcoming.

Fowler,David. The Mathematics of Plato's Academy - A New
Reconstruction, London, Oxford University Press, 1987.

Fraser,Craig. "Joseph Louis Lagrange's Algebraic Vision of the
Calculus", Historia Mathematica 14(1987), 38-53.

Herz-Fischler,Roger. A Mathematical History of Division in
Extreme and Mean Ratio, Waterloo,Ontario, Wilfred Laurier
University Press, 1987.

A discussion concerning the philosophy of proofs? -
compliments of Irving Anellis, from the Iowa State
University Daily,November 17,1986

DUELING MATH PROFESSORS
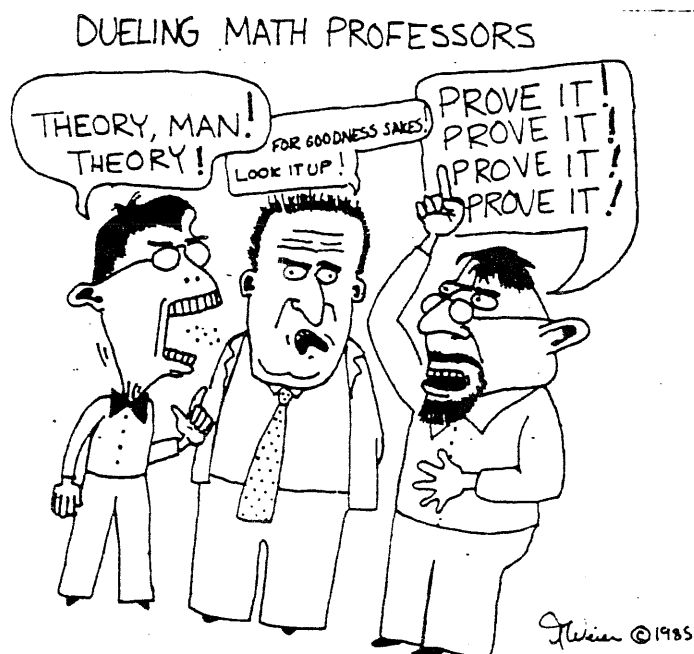
Canadian Society for History
and Philosophy of Mathematics

Société canadienne d'histoire et
de philosophie des mathématiques

ANNUAL BUSINESS MEETING / ASSEMBLEE GENERALE
HAMILTON, ONTARIO
May 26 mai 1987

MINUTES / PROCES-VERBAL

1. **CFH/FCEH**

   Un représentant de CFH/FCEH vient nous entretenir du Forum national sur le non et le sous-emploi des humanistes détenteurs de doctorat et le développement de nouveaux débouchés professionnels que veut tenir la Fédération. Il demande que la Société soutienne formellement l'organisation de ce forum et ce même financièrement si possible. Il demande aussi qu'un représentant soit nommé pour ce forum.

   La question sera reprise à un point ultérieur de l'ordre du jour.

2. **Procès-verbal de l'assemblée générale de 1986.**

   IL EST PROPOSE par R.S.D. Thomas, secondé par V. Katz,

   que le Procès-verbal de l'assemblée-générale du 27 mai 1986, tel que reproduit dans le Bulletin de la Société, soit accepté.

   Accepté à l'unanimité.

3. **Nomination d'un scrutateur**

   Ed. Barbeau est unanimement élu scrutateur pour l'élection des membres de l'exécutif et du conseil d'administration. Il fera rapport à la fin de l'assemblée.

4. **Rapport du président: M. Walker.**

   a) Bulletin

   Le Newsletter a été remplacé par le Bulletin sous la direction de Roger Herz-Fishler, de Carleton University. La qualité du Bulletin est bien supérieure à celle du Newsletter. L'exécutif demande à tous les membres de contribuer au Bulletin. C'est à cette seule condition que le Bulletin jouera le rôle de diffuseur d'informations qu'on attend de lui. Il est à noté que pour 1987-1988, Roger Herz-Fishler sera épaulé par Tom Archibald, qui s'occupera de recueillir les informations relatives aux autres sociétés dont les intérêts recoupent les nôtres; Craig Fraser tentera d'obtenir que les activités d'histoire des mathématiques des diverses université canadiennes, comme par exemples les cours d'histoire des mathématiques qui y sont données, les conférences, les thèmes de recherches.

   b) Relations avec des sociétés « soeurs ».

   L'exécutif, lors de sa réunion d'hier, a décidé que des contacts seraient pris avec

la Société mathématiques du Canada, la section philosophie de la Société canadienne d'histoire et de philosophie des sciences et le Groupe canadien d'études en didactique des mathématiques, et ce dans le but d'évaluer la possibilité d'avoir des activités communes avec celles-ci.

Dans ce contexte, l'exécutif propose que lors de notre prochain congrès à Windsor, en mai porchain, une session soit dévolue aux sciences exactes à l'époque victorienne. Francine Abeles a acceptée d'organiser cette session.

c) Séries de monographies sur l'histoire des mathématiques.

L'idée plusieurs fois soulevée d'avoir une série de monographies a refait surface. Le porchain exécutif abordera cette question.

5. Rapport du Secrétaire-trésorier: Louis Cahrbonneau

Le rapport est joint en annexe.

Le rapport a été accepté à l'unanimité.

6. Bulletin

L'assemblée manifeste son appréciation du très bon travail fait par Roger Herz-Fishler comme éditeur du Bulletin au cours de l'année.

Roger Herz-Fishler réitère son invitation à tous les membres de la Société de lui envoyer des notes, comentaires, comptes-rendus de livres pour publication dans le Bulletin.

Quelques membres suggèrent que le format du Bulletin soit modifié et corresponde à une feuille 3" $\frac{1}{2}$×14" pliée en deux. Le secrétaire-trésorier s'informera des coûts impliqués par un tel format.

7. CFH/FCEH

Après discussion,

IL EST PROPOSE, par Roger Herz-Fishler, secondé par Liliane Beaulieu,

que la Société fasse parvenir un montant de $200 à la Fédération canadienne des études humaines afin de manifester son soutient au Forum national sur le non et le sous-emploi des humanistes détenteurs de doctorat et le développement de nouveaux débouchés professionnels débouchés professionnels, et que le représentant de la Société à ce Forum soit le président de la Société.

Accepté à l'unanimité.

8. Rapport du scrutateur: Ed Barbeau

    La résultat du vote est le suivant:

    Louis Charbonneau, président, 15 pour, 0 contre.
    Len Berggrenn, vice-président, 15 pour, 0 contre.
    N. Malik, secrétaire-trésorier, 15 pour, 0 contre.
    Viktor Katz, membre du C.A., 15 pour, 0 contre.
    Greg Moore, membre du C.A., 15 pour, 0 contre.

9. Divers

    a) Congrès 1988.

        La congrès 1988 aura lieu à Windsor, Ontario, les 28, 29, 30 mai 1988.

    b) Cotisation annuelle

    IL EST PROPOSE, par Louis Charbonneau, secondé par Tom Archibald,

    que la cotisation annuelle des membres qui sont «sous-employés» ou en chomage soit la même que celle des étudiants, soit $5.00.

    Accepté à l'unanimité.

    IL EST PROPOSE, par Louis Charbonneau, secondé par Tom Archibald,

    que la cotisation annuelle des membres à la retraite soit de $5.00.

    10 pour, 3 contre.

        Liliane Beaulieu suggère que la Société envisage la possibilité d'avoir des membres honoraires.

    N'ayant plus rien à l'ordre du jour, l'assemblée est levée.

    □□□□□□□