

BULLETIN

CSHPM/SCHPM

THE TOKYO HISTORY OF MATHEMATICS SYMPOSIUM 1990

The 21st International Congress of Mathematicians (ICM) will be held in Kyoto, Japan, from August 21 through 29, 1990, the first one in the East in the almost one hundred years of its history. As a conference related to the Kyoto ICM, Japanese historians of mathematics have organized the History of Mathematics Symposium to be held in Tokyo on August 31 and September 1, 1990. It is supported by the Organizing Committee of the Kyoto ICM, the History of Science Society of Japan, and the International Commission on the History of Mathematics.

The Tokyo Symposium will emphasize the following three fields in the history of mathematics : (1) mathematical traditions in the East, (2) the history of mathematics in modern Europe, and (3) the interaction between mathematical research and the history of mathematics. It will consist of the two sessions : Session A comprised of 22 invited lectures, and Session B comprised of short communications.

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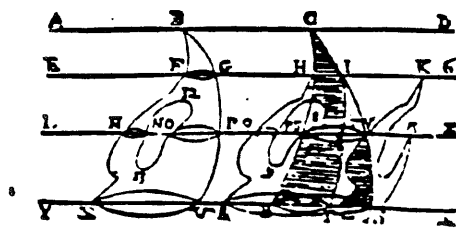
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Canadian Society for History
and Philosophy of Mathematics
Société canadienne d'histoire et
de philosophie des mathématiques

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.

We all owe a debt of thanks to Roger Herz-Fischler for the fine job he has done over the past several years in editing and sending out the Bulletin. Henceforth all material should be sent to interim editor and utility-infielder:

Craig Fraser
 Institute for the History and Philosophy
 of Science and Technology
 Victoria College
 University of Toronto
 Toronto, Canada M5S 1K7
 Bitnet address: IHPST at UTOREPAS

It would be appreciated if those submitting more than simple new items would send them in typed single-spaced 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 \$21 (\$US 16).

If 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 \$50.50 (\$US 38). 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 address: MAMALIK@CONU1.CA

Kindly include your electronic mail address if you have one.

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ANNUAL MEETING

Queen's University

Kingston, Ontario

May 27-29 1991

The call for papers for this meeting is printed at the end of this Bulletin. Programme chair is Erwin Kreyszig of Carleton University.

The special session at the Kingston meeting will be devoted to the subject of women in mathematics. The guest speaker is Ann Hibner Koblitz of Hartwick College, New York, author of A Convergence of Lives: Sofia Kovalevskaja - Scientist, Writer, Revolutionary (Birkhäuser, 1983) and "Science, Women and the Russian Intelligentsia: The Generation of the 1860s", Isis 79 (1988), 208-226. She has also written on gender and science and on women in science, technology, and medicine in developing countries.

Note that the Kingston meeting is three days and that papers for the special session will be presented on the first day. Note also that the meeting overlaps with the meeting of the Canadian Society for the History and Philosophy of Science.

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Cover

The cover reproduces the announcement for The Tokyo History of Mathematics Symposium, held earlier this year at the University of Tokyo. Organized by Dr. Chikara Sasaki, the Symposium was a parallel conference to the International Congress of Mathematics held in Kyoto. This conference as well as the historical sessions at the MAA/AMS meetings suggest that history of mathematics is attaining a higher profile in the mathematical community.

Invited speakers at the symposium were Kokiti Hara, Ryosuke Nagaoka, Masahito Takase, Katsuya Miyake, Chikara Sasaki, Mitsuo Sugiura (Japan), Christian Houzel, Annick Horiuchi, Roshdi Rashed (France), Günther Frei, Erwin Neuenschwander (Switzerland), Joseph Dauben, David Rowe (USA), Chandler Davis, Liliane Beaulieu, Craig Fraser (Canada), Jeremy Gray (Great Britain), Eberhard Knobloch, Erhard Sholz (Germany), Umberto Bottazzini (Italy) and Jesper Lützen (Denmark). Dr. Sasaki plans to publish the proceedings of the symposium in 1992.

As the July 1990 issue of Annals of Science attests, there is considerable current interest in the history of science in Japan. Two of the papers at the Symposium dealt with the development of mathematics there. For the information of CSHPM members the abstracts for these papers are reproduced below.

Annick Horiuchi "Katahiro Takebe's (1664-1739) Conception of Mathematics and its Historical Background)"

Historically few Chinese and Japanese mathematicians have discussed mathematical methodology. In this context Katahiro Takebe's Tetsujutsu sankyô (1722) is an exceptional document. Using a range of examples Takebe sets forth a general method of research which he calls "tetsujutsu", literally, "the technique of linkage". The title of the book may be translated as "Classic of tetsujutsu".

The paper describes the way a Japanese mathematician conceived mathematical practice at the beginning of the 18th century by examining the methodological commentaries appended to the examples in Takebe's book. Takebe is concerned with "the formulation of rules, principles of procedure (jutsu) and computation". He distinguishes between a process of "conforming" in which the procedure is reached directly by translating the hypotheses of the problem into numerical relations, and the process of "taking contraries" in which the procedure is reconstructed from the numerical values that it produces.

Takebe's treatise appeared after a period of productive mathematical activity dominated by two major features: the extensive use of algebraic devices to solve problems and the introduction of infinite processes to remove the difficulties raised by the computation of the length of an arc. The paper shows how this research influenced Takebe's conception of mathematics.

Chikara Sasaki "The Adoption of Western Mathematica in Meiji Japan, 1853-1903"

There is a dual explanation for Japan's rapid assimilation of western mathematics: the old order of modern Japan possessed a sophisticated traditional mathematics called "wasan"; new Japan was strongly concerned to reform its educational system, to establish military academies and to found universities.

Tokugawa Japan had a highly developed "wasan" which is considered to have a reformulation of Chinese mathematics by Takakazu Seki (1642-1708). Originally it was connected with calendrical calculations, but during the later period came to be pursued for its own sake as pure mathematics. It was discarded when applications to natural science were needed.

Soon after the American navy reached Japan in 1853 the study of western military science was begun. Western mathematics was first systematically introduced into the Nagasaki Navy Academy, founded in 1855. In 1872 the Ministry of Education decreed that elementary mathematics was to be western in style.

The University of Tokyo and the Tokyo Mathematical Society were founded in 1877. The university played a crucial role in establishing a tradition of research in western higher mathematics. The first Japanese mathematician there was Dairoku Kikuchi, a graduate of Cambridge who laid the foundation for general mathematical education. The research tradition was initiated by the second Japanese professor of mathematics, Rikitaro Fujisawa. Possessing a doctorate in mathematics from the University of Strasbourg, he introduced the German system of advanced research seminars. The first internationally renowned Japanese mathematician, Teiju Takagi, came from his seminar, and in 1903 published an important paper which resolved a problem Kronecker had proposed. This was exactly a half century after Japan was shocked by the arrival of Commodore Perry and western science.

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Before leaving the subject of Japan readers may wish to take note of the following story recounted in the New York Times Book Review October 28, 1990: "...a Frenchman, a Japanese and an American facing the firing squad are granted a last wish. The Frenchman asks to hear the "Marseillaise" one last time, and the Japanese asks for one more lecture on Japanese management. The American, hearing his friends' requests, asks simply to be shot first."

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British Encyclopedia Project

A major effort is underway to produce an "Encyclopedia of the History and Philosophy of the Mathematical Sciences". The work is under the chief editorship of Ivor Grattan-Guinness and is scheduled for publication in 1992 by Routledge (London). There is a significant Canadian involvement in this project. Albert Lewis is an advisory editor in charge of bibliography and reference and is writing several articles on this subject as well as an article on complex numbers and quaternions. Other contributors are Roger Herz-Fischler (golden section), Gregory Moore (general sets and predicate logic), Alejandro Garciadiego (set paradoxes), Alexander Jones (Greek and Byzantine mathematics), Thomas Archibald (electricity and

magnetism) and Craig Fraser (calculus of variations and classical mechanics).

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Beaulieu Dissertation on Bourbaki

Liliane Beaulieu was awarded her doctorate this year from the Université de Montréal for her dissertation "Bourbaki: Une histoire du group de mathématiciens français et de ses travaux (1934-1944)". She is currently on a SSHRCC post-doctoral fellowship at Berkeley, where she is researching the funding of mathematicians in France between the world wars. Félicitations Liliane!

MAA Award to Thomas Archibald

At the summer 1990 meeting of the MAA/AMS in Columbus, Ohio CSHPM Vice-President Thomas Archibald received an award for an article that he published in Mathematics Magazine 62 (1989), 219-232, "Connectivity and Smoke-Rings: Green's Second Identity in its First Fifty Years". The award attracted the notice of Tom's Nova Scotia MLA as well as the local newspapers. Congratulations Tom!

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Historiography Article

The summer 1990 History of Science 27,149-173 contains an article by Ivor Grattan-Guinness titled "Does History of Science Treat of the History of Science? The Case of Mathematics". The sage of Bengelo, Herts. writes:

In other words, History of Mathematics is a classic example of a ghetto subject: too mathematical for historians and too historical for mathematicians. The creation of professional posts in History of Mathematics outside socialist countries occurs rarely, so that entry into the subject is maximally discouraged: most of those who work in it are employed as mathematicians in Mathematics departments, with some in Education departments and a tiny minority of departments of Philosophy, History, and even History of Science. My main explanation for this sad state of affairs is that the subject is too technical (and maybe fearful) for historians even to attempt to master it, and also profoundly subversive to mathematicians' understanding of mathematics (for example, the (non/?-) importance of their own research) and to the stances adopted by educators;

therefore it has to be ignored by everybody, for different reasons.

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Last Call!

Please note that the end of November is the deadline for the submission of papers from the Victoria meeting to Robert Thomas, Managing Editor of Proceedings. For information concerning format see his memo of 12/6/90.

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News from the Societies

The British Society for the History of Science and the North American History of Science Society will hold a joint meeting in Toronto in July of 1992. This should be a very large gathering of historians of science. CSHPM is getting involved. Perhaps our society should contact the British historians of mathematics and see if they wish to participate in some sessions. A topic for the 1991 AGM?

The International Commission on Mathematics Education is holding a conference in Québec in August 1992. They plan to hold a preliminary meeting in Toronto, probably at the end of July, with history of mathematics as a focus. CSHPM Councilor Victor Katz is the organizer. His address is 841 Bromley St., Silver Spring, MD 20902.

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Minutes of CSHPM/SCHPM Annual General Meeting 31 May 1990 University of Victoria

1. Len Berggren, President of the Society, called the meeting to order at 12:45 p.m.
2. The minutes of the previous AGM, as circulated in the Bulletin, were approved as circulated.
3. Francine Abeles and Tasoula Berggren agreed to act as scrutineers for the ballots.
4. The treasurer's report gave credits for the year of \$6055.36 and debits of \$5895.31 for a balance of \$160.05 (down from \$1632.00 for the previous year!). Charles Jones's motion that dues for the next year be increased to \$21 was seconded by I. Annelis and approved unanimously.
5. The President began his report by thanking M. A. Malik, Secretary-Treasurer of the Society, for his devoted work,

Francine Abeles for her excellent work as Programme Chair this year, Roger Herz-Fischler for his hard work as editor of the Bulletin for the last several years, and Tasoula Berggren who suggested the idea of doing a proceedings and who edited them for the past two years. He also asked for volunteers as editor of Bulletin and programme chair. Louis Charbonneau will be chair of the Nominating Committee. The incoming president will be our new representative to CFH and Wes Stevens will continue as our representative to IUHPS.

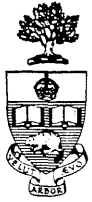
6. There was no Old Business.

7. Ubi D'Ambrosio suggested a topic on the history of mathematics in Canada for our next Special Session and in the course of the discussion Erwin Kreyszig suggested broadening this to history of mathematics in America as well.

8. The scrutineers reported the results of the elections. 43 ballots were cast and the results of the elections were:

- President - Craig Fraser
- Vice-President - Thomas Archibald
- Secretary Treasurer - M. A. Malik
- Councillors - Victor Katz, Norbert Schlomiuk
- Ongoing Councillors to May 1991 are C. V. Jones and R. Thomas.
- Len Berggren will be on Council as past-President.

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October 1990

KENNETH O. MAY FELLOWSHIP IN THE HISTORY OF MATHEMATICS
AT THE UNIVERSITY OF TORONTO, 1991-92

The Institute for the History and Philosophy of Science and Technology at the University of Toronto offers programs of study leading to the Master of Arts and Doctor of Philosophy. A major in the history of mathematics may include courses in the history of the physical sciences, history of the biological sciences, history of technology, and philosophy of science.

The May Fellowship is awarded for one year to a graduate student studying toward a graduate degree in the history of mathematics in the Institute. A renewal for one additional year is automatically considered during the first year. The Fellow is eligible to apply for a second one-year renewal. The stipend is \$7750 plus Canadian tuition fees. Non-Canadians, for whom tuition is higher, may apply to the University for a tuition-fee waiver.

Admission application forms are available from:

Graduate Office
IHPST
Victoria College, Rm. 316
University of Toronto
Toronto, Canada M5S 1K7

Please indicate in your admission application that you wish to be considered for the May Fellowship.

Application deadline is March 31, 1991.

CALL FOR PAPERS APPEL DE COMMUNICATIONS

Canadian Society for the History and Philosophy of Mathematics
Société Canadienne d'Histoire et de Philosophie des Mathématiques

Annual Meeting / Réunion Annuelle
Queen's University, Kingston, Ontario
May 27 - 29 mai 1991

Special Session spéciale:
Women in Mathematics / Les Femmes et les mathématiques
Invited Speaker / Conférencière invitée: **Ann Hibner Koblitz, Hartwick College**

Members are invited to present a paper on any subject related to the history of mathematics, its use in the teaching of mathematics, the philosophy of mathematics. Talks will be of thirty minutes' duration, but some longer slots can be made available if necessary.

Papers contributed to the special session will be presented on the first day, May 27.

Send your title and an abstract by

February 28, 1991, to:

Les membres de la SCHPM sont priés à présenter une communication portant sur l'histoire des mathématiques ou sur son utilisation dans l'enseignement, sur la philosophie des mathématiques, ou tout sujet connexe. Trente minutes seront allouées pour chaque présentation; cependant nous réservons l'option d'accommoder quelques présentations plus longues si c'est nécessaire.

Les communications contribuées à la session spéciale seront présentées au premier jour, le 27^{me} mai.

Veillez envoyer le titre de votre communication, ainsi qu'un résumé bref, avant

le 28^{me} février 1991, à

Professor E. Kreyszig
Department of Mathematics and Statistics
Carleton University
Ottawa, Ontario, K1S 5B6

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