

International Study Group on the Relations Between HISTORY and PEDAGOGY of MATHEMATICS NEWSLETTER

AN AFFILIATE OF THE INTERNATIONAL COMMISSION ON MATHEMATICS INSTRUCTION

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Calendar

1994 March 28 – 31 Winchester, England
HIMED 94 (History in Mathematics Education) to be held at King Alfred's College in Winchester. (See insider for more details.)

1994 April 13 – 16 Indianapolis
Annual meeting of the Americas Section of HPM in connection with the annual meeting of the National Council of Teachers of Mathematics. (See inside for more details.)

1994 April 24 – 30 Oberwolfach, Germany
31st Oberwolfach meeting on the History of Mathematics. For information, contact Eberhard Knobloch, Institut für Philosophie und Wissenschaftsgeschichte, Technische Universität Berlin, Berlin, GERMANY, Tel: (030) 401-6473; or Mathematisches Forschungsinstitut Oberwolfach Geschäftsstelle, Alberstrasse 24, W-7800 Freiburg im Breisgau, GERMANY.

1994 May 14 – 18 Nancy
Congres International Henri Poincaré will be held at the Archives of the Centre d'Etudes et de Recherche

Henri-Poincaré. For information, contact Archives -- Centre d'Etudes et de Recherche Henri-Poincaré, Université de Nancy II, F-54000 Nancy, FRANCE; Fax: (33) 83 96 23 47; e-mail: heinzman@plg.u.-nancy.fr.

1994 May 27 – 28 Cherbourg, France

Xème Colloque Inter-IREM Épistémologie & Histoire des Mathématiques: La Mémoire des Nombres. (See inside for more details.)

1994 June 3 - 5 Istanbul

Symposium on Science & Technology in the Turkish and Islamic World. (See inside for more details.)

1994 June 8 – 10 Calgary

Annual Meeting of the Canadian Society for History and Philosophy of Mathematics. (See inside for more details.)

1994 July 18 – 22 Blumenau, Brazil

Second Iberoamerican Congress on Mathematics Education. For information, contact Maria Salett Biembengut or José Valdir Floriani, Fundação Universidade Regional de Blumenau, Rua Antonio de Veiga, 140, Caixa Postal 1507, CEP 89012900, Blumenau SC, BRAZIL; Phone: 55 473 23 0422; fax: 55 473 22818.

1994 July 25 – 27 Blumenau, Brazil

International meeting of HPM. (See inside for more details.)

1994 August 3 – 11 Zurich

International Congress of Mathematicians. For information, contact ICM 94, International Congress of Mathematicians, ETH Zentrum, CH-8092 Zurich, SWITZERLAND; Phone: 41 1 632 52 30; fax: 41 1 252 91 84; email: icm94@math.ethz.ch.

1994 August 15 – 17 Minneapolis

Mathfest, including the summer meetings of the Mathematical Association of America and the American Mathematical Society. For details, contact Hope Daly, AMS, P.O. Box 6887, Providence, RI 02940.

1994 August 16 – 20 Shanghai

ICMI-China Regional Conference on Mathematics Education. The conference theme is Teacher Preparation in Mathematics. For information, contact Zhang Dian-zhou and Zhang Zhen-ya, Department of Mathematics, East China Normal University, Shanghai 200061, PEOPLE'S REPUBLIC OF CHINA; tel: 86-021-257-1095; fax: 86-021-257-8367.

1994 October 13 – 16 New Orleans

Annual meeting of the History of Science Society. For information, contact the Program Co-Chairs, Clark Elliott, University Archives, Harvard University Library, Cambridge, MA 02138, U.S.A. Phone: 617-495-2462; or Richard Kremer, Department of History, Dartmouth College, Hanover, NH 03784, U.S.A. Phone: 603-646-2228; fax: 603-646-2810; email: richard.kremer@dartmouth.edu.

1995 January 4 – 7 San Francisco

Annual meeting of the American Mathematical Society and the Mathematical Association of America. There will be several special sessions of interest to readers. More information will be forthcoming in the next Newsletter.

1995 June 30 - July 4 Cairns, Australia

International meeting of HPM. The tentative theme of the meeting is the mathematics of native peoples. More information will be forthcoming in future Newsletters.

1995 October 29 - November 3 Minneapolis

Third International History, Philosophy and Science Teaching Conference. For information, contact

Professor Fred Finley, Department of Curriculum and Instruction, University of Minnesota, Minneapolis MN 55455-0208, U.S.A.; fax: 612-624-8277; email: finleyfn@vx.cis.umn.edu.

Ramanujan Birthday Celebrations in India, 1993: A Brief Report

R.C. Gupta

The 107th birthday of Srinivasa Ramanujan (1887-1920) was celebrated in the postgraduate Department of Mathematics, Ranchi University, Ranchi, on December 22, 1993 (from 2 p.m. to 4 p.m.). During this gathering, a 'Mathematics Education Cell' was also formed under the auspices of the Ranchi Chapter of the Bihar Mathematical Society. Both these events turned out to be good for promoting and popularizing history of mathematics among the attending teachers and students of Ranchi's educational institutions. In fact, most of the speakers emphasized the use of history of mathematics for making mathematics classroom teaching interesting and lively. The function was chaired by Professor Prahlad Singh, Head of the Department of Mathematics, Ranchi University. A portrait of Ramanujan was garlanded on the occasion.

The Ramanujan Memorial Lecture was delivered by Professor K. C. Prasad, Ranchi University. Paying rich tributes to Ramanujan, he described his contributions in selected fields of Bernoulli numbers, zeta functions, and the theory of partitions. A historical survey of the developments in these areas was presented in a general way. One method of defining the Bernoulli numbers B_{2n} is the Maclaurin series

James Bernoulli (1654-1705) had used these numbers in finding sums of powers of the integers. He explicitly gave the sums

$$1^r + 2^r + 3^r + \dots + n^r \quad (r = 1 \text{ to } 10).$$

About 1740, Leonhard Euler (1707-1783) used these numbers in finding the infinite sums for the even integral values $r = 2n$. Ramanujan used the result $S_r = \zeta(r)$ to define the Bernoulli numbers of orders which are not integers and derived several properties. While describing in detail the contributions of Ramanujan in the theory of partitions, the speaker pointed out that one of the conjectures of this great mathematician regarding the congruence of the partition function was found to be incorrect later on.

The Mathematics Education Cell was inaugurated by R. C. Gupta by lighting a traditional lamp. In his address, he gave a tribute to Ramanujan and also spoke on the history of mathematics as related to mathematics education. He said that Ramanujan may be regarded as India's gift to the world of modern mathematics. It was pointed out that the biographies and Notebooks of Ramanujan contain much material even in elementary mathematics. In this connection, Gupta mentioned the set of introductory booklets on *Creativity of Ramanujan* written to serve as instructional guides to mathematics teachers at all levels from primary to the University. The booklets have been published by the Association of Mathematics Teachers of India (Madras), which has also instituted an award for the use of history of mathematics in education. (An endowment fund for this was donated by Gupta.)

A century ago, a school teacher in India told his class that n/n is always one. Ramanujan, who was attending that class, at once asked about $0/0$, which upset the teacher. After narrating this anecdote, Gupta gave a very good explanation as to why $0/0$ is indeterminate. Ramanujan's complete devotion and absorption to mathematics is illustrated by his instant reaction to G. H. Hardy's taxicab number 1729. Even from his sick bed Ramanujan pointed out that the number is very interesting, being the smallest integer which can be written as the sum of two cubes in two different ways, namely,

$$10^3 + 9^3 = 12^3 + 1^3 = 1729.$$

The best known ancient approximation of π was $355/113$, which was given by the Chinese mathematician Zu Chongzhi (A. D. 5th century). Ramanujan improved this by giving

which yields a value correct to 14 decimal places. However, his most significant contribution in this connection is the very rapidly convergent series which was used in 1986 to compute π to 17 million places. Gupta also spoke on some other topics useful for secondary schools. For example, to find the perimeter of an ellipse with semimajor axis a and semiminor axis b , Ramanujan's one expression is

There was a short talk by Mr. Tapas Chakravarty (Bishop Westcott's School), who pleaded for the use of historical material in the mathematics classroom. For instance, while introducing the topic of arithmetical progressions, the teacher may tell the famous story of the child (Gauss) who could at once give the sum of the first one hundred integers. Brief remarks and suggestions were also made by some other speakers.

The Chairman (P. Singh) in his speech elaborated on certain points regarding history and education of mathematics. He regretted that history of mathematics has yet to find its due place in Indian classrooms and wanted the subject to be included in the curriculum. He also made a sort of comparison between Ramanujan and other great mathematicians of India and Europe. He tried to see a mysticism in Bhaskara II's solution $x = 226153980$, $y = 1766319049$ for the equation $61x^2 + 1 = y^2$, which he obtained in just a few steps (A.D. 1150). (Actually, the solution was arrived at by the marvellous Indian cyclic method.) Being unaware of the Indian solution, Fermat in 1657 proposed the above equation to Frénicle as a challenge problem.

The task of carrying out the activities of the Mathematics Education Cell has been entrusted to a committee consisting of Professors Prahlad Singh and K. C. Prasad as convenors, Dr. B. B. Mishra (B. I. T. Mesra) as president, Professor R. P. Pathak (St. Xavier's College) and Murari Prasad (Ranchi College) as Vice Presidents, Mr. Tapas Chakravarty as Secretary, and many others as Joint Secretaries, Coordinators, and Treasurer. The aims and objectives of the Cell include arranging popular lectures, organizing quizzes, and publishing a magazine.

HIMED 94

A residential conference on the value and use of history in mathematics education will be held at King Alfred's College, Winchester, England on March 28-31, 1994. This is the fifth annual event designed to bring together researchers and teachers at all levels of education to explore issues around the educational use of history of mathematics. Past meetings in this series have established a fruitful interaction among those interested in the history of mathematics from a wide variety of perspectives, including the research historian and the classroom teacher.

The format is a mixture of talks, from teachers in the U.K. and elsewhere, who have developed historical perspectives in their mathematics teaching, and workshop sessions, to consolidate and develop the ideas further. The result will be a sharing of experiences of classroom activities and initiatives, which will enrich and support the mathematics teacher in various classroom situations:

- for teaching in middle school or at sixth form level
- in cross-curricular initiatives
- to encourage girls into mathematics
- to teach in a multicultural setting
- as a new approach in remedial and numeracy teaching
- helping the trainee teacher devise classroom strategies

The conference will include the usual features which regular attenders at HIMED have come to expect, including

- an exhibition of classroom work
- QED Bookstall
- history of mathematics videos
- a new HIMED 94 T-shirt
- information and help on resources
- computer technology corner
- opportunity to meet teachers from many countries

In addition, the program this year has been devised to make full use of the conference location in the beautiful city of Winchester. In particular, a Mathematics Trail around Winchester has been devised specially for this HIMED, and a visit is being paid to the historic library of Winchester College.

Among the contributors and contributions to HIMED 94 are the following: Ubiratan D'Ambrosio (Brazil), "The historical dimension of ethnomathematics as a pedagogical strategy;" Peter Baptist (Germany), "Development of triangle geometry;" Peter Bero (Slovakia), "Winebottles in the classroom;" Bob Burn (U.K.), "History for the anti-history teacher;" Sue Burns (U.K.), "The *Illustrated London News* as a resource;" Maria Estrada (Portugal), "History of mathematics for teachers in training;" Paul Ernest (U.K.), "Philosophy of mathematics: what benefit?" John Fauvel (U.K.), "History of mathematics and the visually handicapped student;" Athanasius Gagatsis and Yannis Thomaidis (Greece), "The history of absolute value;" Helen Gardner and Irith Shillor (U.K.), "How to set up a maths trail;" Ray Godfrey (U.K.), "Arab folklore in the primary school;" Michèle Gregoire, Philippe Brin, and Maryvonne Hallez (France), "Renaissance perspective across disciplines;" Torkil Heiede (Denmark), "Non-Euclidean geometry for teachers in training;" Ivan Taftberg Jakobsen (Denmark), "Art and science in Renaissance cathedrals;" Marjolein Kool (Netherlands), "Archimedes, Peter de Halle and Hiero's crown;" Manfred Kronfellner (Austria), "History of mathematics in the classroom: problems and teaching methods;" Jan van Maanen (The Netherlands), "Must mathematical progress mean the loss of geometrical insight? A moral for teachers;" Anne Michel-Pajus (France), "The eventful story of divergent series;" Luis Moreno (Mexico), "Mathematics: a historical and pedagogical perspective;" Peter Ransom (U.K.), "Data handling with Indiana Ransom and the Flint Stones;" Colette Richardson (U.K.), "Chinese mathematics;" John Sharp (U.K.), "Dürer in the classroom;" Irith Shillor and Pat Perkins (U.K.), "Recreational mathematics in the classroom;" Frank Swetz (U.S.A.), "The Chinese derivation of the volume of a sphere: learning implications;" Christian Thybo (Denmark), "Written assignments on the history of mathematics: use, evaluation, pitfalls, and pleasures;" Eduardo Veloso (Portugal), "Old instruments in the mathematics classroom;" Gerry Verhaegh and Anko Haven (The Netherlands), "How can pupils' study of history of mathematics be assessed?" and Guillermina Waldegg (Mexico), "Historical studies and educational research." Other speakers will be announced in the final program.

HIMED 94 is organised by the British Society for the History of Mathematics. The conference starts at lunchtime on March 28 and finishes at lunchtime on March 31. To register, send a note with your name, address, phone number and institution, along with a check for £125 made payable to BSHM, to Irith Shillor, King Alfred's College, Winchester, SO22 4NR, U.K. The fee covers full board and the conference fee. For information on other rates, e.g. non-residential or not staying the full period, please contact Irith Shillor by phone at 0962-827202, by fax at 0962-842280, or by email at iriths@wkac.ac.uk.

Americas Section of HPM

The Americas Section of HPM will hold its annual meeting in connection with the meeting of the National Council of Teachers of Mathematics in Indianapolis from April 13-16, 1994. The HPM session will be held on Friday, April 15, from 5:00 to 7:30 pm in Celebration Hall A of the Hyatt. The program will include Frank Swetz, "History and Pedagogy: Historical Connections;" Diane Mason, "Exploring the Tree of Mathematics;" and Mary Houston, "Enhancing today's mathematics classroom using ancient games from various countries." There will also be a business meeting during the session to discuss the proposed constitution for HPM (see below) and to elect officers. Because of this business meeting, it is very important that as many people as possible attend. Please come and let your voice be heard. We will all adjourn for dinner after the session to continue our discussions.

On Saturday, April 16, HPM will hold a joint session with the International Study Group on Ethnomathematics, also in Celebration Hall A of the Hyatt, from 12:30 - 3:30 pm. The speakers at that session will include Claudia Zaslavsky, "Patterns in African Cultures," and Gloria Sanok, "Mathematics and Islamic Art." Other speakers chosen by the ISGEM will contribute to the theme of the joint session, "Patterns in Many Cultures." The ISGEM will itself hold a session on Thursday, April 14 from 4:30 - 7:00 pm.

The general program of the NCTM contains many sessions relating to the issue of the use of history in the teaching of mathematics. These include

James Lightner (Western Maryland College), "Apply the Standards: Link Mathematics to Its Historical

Foundations -- Who, What, Why" (Wednesday, 1:30).

Wilbert and Luella Reimer (Fresno Pacific College), "Linking Math with Its History: Stories, Models, and Resources to Enrich Teaching" (Wednesday, 1:30).

James Sherrill (University of British Columbia), "Mathematics Problems from Around the World: Linking the Global Community" (Thursday, 1:30).

Victor Katz (University of the District of Columbia), "Self-contained Historical Modules for the High School Mathematics Classroom" (Thursday, 1:30).

Donald W. Smith (Albuquerque Academy), "Use Math History to Generate Interest and Link the Subject to a Variety of Areas" (Friday, 10:30).

Arnold Perham (Saint Viator High School, Ill.) "Mathematical Connections to Magellan's Circumnavigation of the Globe" (Friday, 10:30).

Barbara Bass (Saint Catherine's School, Va.) "Make It More Relevant -- Put a Little History of Mathematics in Your Class" (Friday, 10:30).

Karen Dee Michalowicz (The Langley School, Va.), "Linking the Ancient and the Modern: Studying Historical Mathematics Algorithms" (Friday, 1:30).

Cathy Morgan (Judson High School, Tx.), "The Geometry of Islamic Art: A Cooperative Mathematics, Social Studies, Art Approach" (Friday, 1:30).

Luis Ortiz-Franco (Chapman University), "Ethnomathematics: Linkages to Pre-Columbian Cultures" (Friday, 3:00).

Lawrence Shirley (Towson State University), "Curriculum and Classroom Ideas from Ethnomathematics" (Saturday, 8:30).

Constitution for HPM Americas Section

At the HPM Americas Section meeting in April, 1993 it was decided that the organization should affiliate officially with the National Council of Teachers of Mathematics. Such affiliation will enable HPM to have an NCTM delegate and to have input into information printed in programs and in the NCTM *Bulletin*. It is hoped that the affiliation will enable HPM to get its message across to more secondary school teachers. In order to affiliate with the NCTM, it is necessary to put the organization on a more formal basis by adopting a constitution. The following constitution was adopted tentatively at the 1993 HPM meeting and is presented for your approval. Changes will be considered at the meeting in Indianapolis. The constitution will then be adopted and officers chosen in accordance with it.

Article 1. Name

- (1) This organization is the Americas Section of the International Study Group on the Relations Between History and Pedagogy of Mathematics, commonly known as HPM.
- (2) The international organization (ISGHPM) is an affiliate of the International Commission on Mathematics Instruction (ICMI) and the Americas Section is an affiliate of ISGHPM.

Article 2. Purpose

- (1) To encourage teachers at all levels to use history of mathematics to motivate and instruct their students.
- (2) To further a deeper and more correct understanding of the pedagogical aspects of integrating history into the teaching and learning of mathematics and the implications thereof.
- (3) To promote national and international contacts and exchanges of scientific information on the relations between history and pedagogy of mathematics.
- (4) To promote and stimulate interdisciplinary research in the history and pedagogy of mathematics with the

cooperation of historians, ethnographers, mathematicians, and mathematics teachers.

Article 3. Membership

- (1) Membership is open to teachers of mathematics and other individuals involved in the furtherance of the aims of the group.
- (2) Membership dues are determined at the Annual Meeting.
- (3) Honorary membership, without payment of dues, may be granted at the Annual Meeting or by the executive board.

Article 4. Meetings

- (1) There will be at least one Annual Meeting held each year.
- (2) The agenda for the Annual Meeting will be published in the *Newsletter* and sent to each member before the meeting. The agenda will include information about vacancies for officers and committees.
- (3) At meetings, the chair is taken by the President or Vice-President or their delegate.
- (4) Approval of a resolution requires a simple majority of the votes cast.
- (5) The secretary will prepare minutes of the Annual Meeting which, after approval by the President, will be published in the *Newsletter*.

Article 5. Officers

- (1) The officers of the Section are the President, Vice-President, Secretary, Treasurer, Historian, and Newsletter Editor. They are elected for four-year terms during the year of the quadrennial ICME meeting.
- (2) The officers shall constitute the executive board. The board shall transact whatever business is necessary between meetings.

Article 6. Amendments

This constitution may be amended by the approval of two-thirds of those voting at the Annual Meeting.

Xème Colloque Inter-IREM Épistémologie & Histoire des Mathématiques: La Mémoire des Nombres. Cherbourg, 27 & 28 Mai 1994

Célèbre, remarquable, ou simplement naturel, le nombre est fondateur de l'activité mathématique. Mémoire des grandeurs, le nombre est aussi objet de mémoire. De la mesure des terres de la Haute Vallée du Nil, à la récente et très probable démonstration de la conjecture de Fermat par Andrew Wiles, le nombre est un témoin de la course humaine à l'abstraction.

Le Xème Colloque inter-IREM d'Épistémologie et d'Histoire des Mathématiques, avec des conférences plénières, des ateliers et des éposés en parallèle, des rencontres avec des animateurs des IREMs, des chercheurs et des historiens de tous horizons, ravivera la mémoire des nombres chez des enseignants soucieux de la transmettre.

Créée en 1975, la Commission inter-IREM, qui organisa en 1977 son premier colloque, de bonne mémoire, à Tailleville, près de Caen, fête un anniversaire. Pour faire bonne mesure, ce colloque, qui n'est donc pas l'un des premiers, et qui ne saurait être négatif mais, à l'opposé, d'une absolue valeur, rassemblera à l'amiable et sans réel complexe, enseignants de nombreuses disciplines et de tous degrés, ayant un commun dénominateur. Venez nombreux, nous comptons sur vous et votre imaginaire... Mais prenez garde: nul ne sait s'il reviendra entier de Cherbourg, et chacun repartira en se demandant s'il était bien rationnel de remettre ça, près de vingt ans après, sur les lieux du crime, même parfait!

Si vous voulez participer ou intervenir à ce Colloque, veuillez écrire à: IREM de B.-N., I.U.T., Boulevard Maréchal Juin, 14000 Caen, FRANCE. Tel: 31-44-27-91; fax: 31-94-32-59.

Symposium on Science & Technology in the Turkish and Islamic World

A symposium will be held in Istanbul on June 3-5, 1994 to commemorate the 600th anniversary of the birth of Ulugh Beg, founder of the Samarkand observatory, and the 125th anniversary of the foundation of the Kandilli observatory. The symposium will discuss various aspects of scientific and technological

developments which occurred in the Turkish and Islamic world, in the fields of the exact sciences such as astronomy and mathematics, as well as natural sciences and technology. It will deal with the history of scientific and educational institutions and the works, contributions, and influence of scientists and scholars. The symposium will study mainly the scientific and technological developments of the late Islamic period, especially from the fall of Baghdad in A.D. 1258 -- representing the turning point in Islamic history -- to the present. Special emphasis will be given to the period which followed the Golden Age of Islamic science, including the activities carried out in Maragha, Samarkand, Damascus, Cairo, Andalusia, and Istanbul. The encounters which took place between the Islamic world and European science and the resulting new institutions will be examined and evaluated from historical and cultural viewpoints.

The aim of the symposium is to provide an opportunity for researchers concerned to communicate their findings and exchange ideas. It is also expected to promote further research in this field. For more information, write to Dr. Feza Günergun, Turkish Society for History of Science, P.K. 234, Beşiktaş, 80692 Istanbul, TURKEY. Tel: (90.212) 260 0717; fax: (90.212) 258 4365.

CSHPM Meeting in Calgary

The annual meeting of the Canadian Society for History and Philosophy of Mathematics will be held June 8-10, 1994 in Calgary in association with the annual meeting of the Canadian Learned Societies. There will be a special session dealing with the history of mathematics in North America as well as general sessions. The keynote speaker will be Karen Parshall of the University of Virginia. Her topic is "The Emergence of the American Mathematical Research Community." Among the other speakers confirmed so far are Thomas Archibald, "History of mathematics in Canada;" William Anglin, "Introducing Jean Prestet;" Hardy Grant, "What is 'modern' about modern mathematics?" Israel Kleiner, "Paradoxes in the history of mathematics;" Erwin Kreyszig, "Topological ideas in analysis;" Abe Shenitzer, "History of set theory;" Craig Fraser, "The proofs of Mayer and Hilbert of the multiplier rule in the calculus of variations;" Peter Griffiths, "Old Babylonian mathematics and its significance for modern students;" A. K. Ray, "Reminiscence: Applied mathematics, Calcutta and Göttingen;" and James Tattersall, "The mathematical versatility of Hertha Ayrton."

In addition to the scientific sessions, the Learned Societies are scheduling various social events at the meeting, including a mountain ranch barbecue and a hot air balloon festival. So plan on coming to Calgary next June and enjoying western hospitality. For more information about the CSHPM meeting, contact the program chair, Craig Fraser, at the Institute for the History and Philosophy of Science and Technology, Victoria College, University of Toronto, Toronto, Ontario M5S 1K7, CANADA or via email to cfraser@epas.utoronto.ca. For information about registration and about the Learned Societies Conference in general, contact the 1994 Learned Societies Conference Registrar, The University of Calgary, ED T 106, 2500 University Drive N.W., Calgary, Alberta T2N 1N4 CANADA. Tel: (403) 220 8094; fax: (403) 289 4338.

International HPM Meeting in Brazil

There will be an international meeting of HPM in Blumenu, State of Santa Catarina, Brazil, to take place July 25-27, 1994. The host will be the Fundação Universidade Regional de Blumenau (FURB), The organization is part of the program of activities of the Seminario Nacional de Historia da Matematica, housed at the Universidade Federal do Parana, in Curitiba (see *Historia Mathematica* 20 (1993), 318-319). The meeting will take place the week following the II CIBEM (Segunda Conferencia Iberoamericana de Educação Matematica), which occurs July 18-22, also in Blumenau.

Blumenau, with 270,000 inhabitants, is a prosperous industrial city in the South of Brazil, founded in 1850 by German immigrants, and also a renowned touristic center. Its Oktoberfest attracts tourists from all over the world. Blumenau is located about 700 km south of São Paulo. It is served by the airport of Navegantes, about 50 km east of Blumenau. There are several daily flights between São Paulo and Navegantes and a good and frequent interstate bus service between São Paulo and Blumenau. Comfortable night buses offer sleeping chairs. Weather in July is winter, but mild, sometimes showing beautiful sunshine during the day and going down to about 40°F in the evenings.

The Scientific Program of the International HPM Blumenau Conference consists of invited plenary talks, concurrent hour and half-hour talks, poster presentations (with rooms for further discussions), and books and project exhibits. The Proceedings will be published. At registration, a book of abstracts will be provided. A fee of US \$20 will be collected at the registration desk, open from 4:00 pm on July 24 at FURB, Rua Antonio da Veiga 140, 89010-971 Blumenau, SC, BRAZIL; tel: (55) 473 26 8288; fax: (55) 473 22 8818.

Blumenau has an excellent chain of hotels. Rates include a substantial breakfast. A good meal in a restaurant costs about US \$10. To register for the meeting and to make a hotel reservation, please complete the forms on page 10 of the Newsletter and mail them to HPM Conference, Caixa Postal 1507, 89010-971 Blumenau SC, BRAZIL.

From Five Fingers to Infinity: A Journey through the History of Mathematics

This new book, edited by Frank Swetz of Pennsylvania State University, is a global survey of the history of mathematics, suitable for people with no background in mathematics as well as for the more informed reader or teacher. It tells the story of the history of mathematics in the form of 114 popularly conceived and entertainingly written articles, organized in a chronological and thematic manner. The articles are culled from the best and most approachable pieces ever written in this area, including articles by Carl Boyer, Howard Eves, Morris Kline, and Dirk Struik. The book contains over 300 relevant, provocative, and helpful illustrations, and 18 "historical exhibits." It is designed for either enjoyable personal reading, as a general reference on the history of mathematics, or as a classroom text. It will be available in May, both in paperback at \$28.95 and in hardback at \$64.95, from Open Court Publishing Company and can be ordered from them at the General Books Division, Box 599, Peru, IL 61354, U.S.A. or from any bookdealer.

Classics of Mathematics

This volume, edited by Ronald Calinger of Catholic University, has more than 130 reading selections taken from such sources as the Rhind or Ah-mose Papyrus through writings of leading mathematicians from the Pythagoreans to David Hilbert and Emmy Noether. Its selections from Eudoxus, Euclid, Archimedes, Euler, and Poincaré are expanded from the 1982 edition of the book. The chapter introductions comprise a concise, up-to-date history of mathematics. They cover such recent scholarship as Van Der Waerden's conjecture on the Neolithic origins of mathematics, J. Høyrup's work on Old Babylonian scribal schools, the debate over when geometric algebra begins, the studies of W. Knorr on Hellenistic geometry, of Li Yan on mathematics in traditional China, and of M. Closs on Mayan mathematics, as well as the work of R. S. Westfall on Newton, H. Edwards on Kummer, and F. Browder and S. MacLane on Hilbert. Each chapter introduction concludes with an extensive bibliography.

Most of the sixty-two biographies in *Classics* are revised, and those of Archimedes, Eratosthenes, Descartes, Newton, Leibniz, d'Alembert, Euler, Gauss, Boole, Kummer, and Poincaré are largely rewritten and expanded to include current scholarship.

Classics of Mathematics will be available from Macmillan in April at a cost of \$36. Orders may be sent to Mr. Greg Iuzzolino, Marketing Manager, Macmillan Publishing Company, Inc., 866 Third Avenue, New York, NY 10022, U.S.A.; tel: 1-800-428-3750; fax: 609-764-6630.

Have You Read?

Ronald Calinger, ed.

This column welcomes references from across the history or pedagogy of mathematics, as well as other works with sections that have potential for encouraging and motivating students to learn mathematics better or that enrich courses. Please send citations with complete bibliographic information to the section editor c/o Department of History, Catholic University of America, Washington, DC 20064, U.S.A.

- Butzer, Paul Leo, and Lohrmann, Dietrich, ed., *Science in Western and Eastern Civilization in Carolingian Times* (Basel: Birkhäuser, 1993).
- Burn, R. P., "Individual Development and Historical Development: A Study of Calculus," *International Journal of Mathematics Education, Science, and Technology* 24 (1993), 429-433.

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