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HPM Advisory Board

Florence D. Fasanelli, CHAIR

SUMMA

The Mathematical Association of America

1529 18th St. N.W.

Washington, D.C. 20036 USA

Victor J. Katz, EDITOR

Department of Mathematics

University of the District of Columbia

4200 Connecticut Ave. N.W.

Washington, D.C. 20008 USA

Evelyne Barbin FRANCE; Ubiratan D'Ambrosio BRAZIL; Ahmed Djebbre ALGERIA; John Fauvel UK; Paulus Gerdes MOZAMBIQUE; Robert Hayes AUSTRALIA; Nikos Kostas GREECE; Ryosuke Nagaoka JAPAN; V. Frederick Rickey AMERICAS SECTION CHAIR; David Wheeler CANADA; Hans Wussing GERMANY.

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1R6); Mexico: Alejandro Garciadiego (UNAM - contact at José M. Velasco 71, Del. Benito Juárez, 03900 Mexico, D.F.); South America: Ubiratan D'Ambrosio (Universidade Estadual de Campinas, CP 6063, 13081 Campinas SP, Brazil); Australia: Robert L Hayes (Mathematics Department, Hawthorn Institute of Education, Private Bag 12, Hawthorn, Victoria 3122); New Zealand: Andy Begg (SMER Centre, University of Waikato, Private Bag 3105, Hamilton); United Kingdom: John Fauvel (Mathematics Faculty, Open University, Milton Keynes MK7 6AA); France: Evelyne Barbin (IREM Paris Nord, Université Paris XIII, Avenue Jean-Baptiste Clément, 93430 Villetaneuse Cedex); Germany and Eastern Europe: Roland Stowasser (Technische Universität Berlin, Straße des 17. Juni 136, 1000 Berlin 12, Germany); Belgium and the Netherlands: Jan van Maanen (Rijksuniversiteit Utrecht, Mathematisch Instituut, Budapestlaan 6, Postbus 80.010, 3508 TA Utrecht, Netherlands) Scandinavia: Bengt Johansson (Institutionen för ämnesdidaktik, Frölundagatan 118, Box 1010, S-431 26 Mölndal, Sweden); Spain and Portugal: Joao Pedro Ponte (Departamento de Educaçao, Faculdade de Ciencias, Universidade de Lisboa, Av 24 de Julho, Lisboa, Portugal); Italy: Luciana Bazzini (Dipartimento di Matematica, Università di Pavia, Strada Nuova 65, 27100 Pavia); Greece, Turkey and the Balkans: Nikos Kostas (Department of Mathematics, Faculty of Sciences, Aristotle University of Thessa-

loniki, 54006 Thessaloniki, Greece); Israel: Anna Sfard (The Science Teaching Centre, The Hebrew University of Jerusalem, Givat Ram, 91904 Jerusalem); South Asia: R. C. Gupta (Department of Mathematics, Birla Institute of Technology, P. O. Mesra, Ranchi-835 215, India); East Asia: Gloria D. Benigno (Bukidnon State College, 8700 Malaybalay, Bukidnon, Philippines); Africa: J. O. C. Ezeilo (National Mathematical Centre, Private Mail Bag 118, Abuja, Nigeria); Elsewhere: U.S. Editorial Office. Send requests and address changes to the distributor for your geographical area.

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Calendar

- 1992 April 1-4.....Nashville
Annual meeting of the National Council of Teachers of Mathematics and the Americas Section of HPM. Contact NCTM, 1906 Association Drive, Reston, VA 22091, U.S.A. (See inside for more details.)
- 1992 April 11-12.....Nottingham
HIMED 92 - An International Conference on the Uses of History in Mathematics Education, sponsored by the British Society for the History of Mathematics. Contact Costel Harnasz, 217 Burton Road, West Didsbury, Manchester M20 8NA, U.K.
- 1992 May 11-15.....Kingston
Second International History, Philosophy, and Science Teaching Conference. Contact Professor Skip Hills, Faculty of Education, Queen's University, Kingston, Ontario K7L 3N6, CANADA.
- 1992 May 22-23Brest
Ninth Inter-I.R.E.M Colloquium on Epistemology and History of Mathematics. The topic this year is the History of the Infinite. Contact Evelyne Barbin at the address on the front page.
- 1992 May 28-30 Charlottetown
Annual meeting of the Canadian Society for History and Philosophy of Mathematics. There will be a special session dealing with ethnomathematics. Contact Professor M. Malik, Department of Mathematics, Concordia University, 7141 Sherbrooke St. Ouest, Montreal, Quebec H4B 1R6, CANADA. (See inside for more details.)
- 1992 June 22-26 Meadville, Pa
A series of lectures on the History of the Calculus will be given for the Allegheny Mountain Section of the MAA by V. Frederick Rickey. For more details, contact Professor Richard McDermot, Mathematics Department, Allegheny College, Meadville, PA, 16335, U.S.A.
- 1992 July 13-15 Göttingen
Third Annual Göttingen Workshop on the History of Modern Mathematics. This workshop, sponsored by the Mathematics and History of Science Institutes at the University of Göttingen will deal with four themes: Probability and Statistics, Connections between Mathematics and Physics, Historiographic Issues in the History of Mathematics, and the Genesis of Mathematical Ideas. For more information, contact Hans Becker, Niedersächsische Staats- und Universitätsbibliothek, Prinzenstrasse 1, D-3400 Göttingen, GERMANY or David E. Rowe, Mathematics Department, Pace University, Pleasantville, N.Y. 10560, U.S.A.
- 1992 August 12-14 Toronto
International meeting of HPM preceding ICME-7. (See inside for more details.)
- 1992 August 17-23 Quebec
Seventh International Congress on Math-

emational Education (ICME-7). Contact Congrès ICME-7 Congress, Université Laval, Québec, QC, G1K 7P4, CANADA or via fax to (418) 656-2000. (See inside for more details.)

- 1992 September 10-13 Cambridge
Annual Residential Meeting of the British Society for the History of Mathematics. The theme of the meeting will be European mathematics. Contact the Secretary, J. Helen Gardner, 25 Hollow Croft Road, Willenhall, West Midlands WV12 5YS, U.K. for information on the meeting and on membership.
- 1992 October 2-3 Oxford, Ohio
Fourth Midwest Conference on the History of Mathematics, sponsored by the Department of Mathematics and Statistics, Miami University. Contact David E. Kullman, Department of Mathematics and Statistics, Miami University, Oxford, OH 45056. (See inside for more details.)
- 1992 November 1-6 Tikal, Guatemala
Pan-American Conference on Pre-Columbian Mathematics, Astronomy and Modes of Thought. Contact Dr. Leonel Morales Aldana, FISICC, Universidad Francisco Marroquin, Apartado Postal 632-A, Guatemala, GUATEMALA. (See inside for more details.)
- 1993 January 13-16 San Antonio
Joint Annual Meeting of the American Mathematical Society and the Mathematical Association of America. Contact Hope Daly, AMS, P.O. Box 6887, Providence, RI 02940, U.S.A.
- 1993 August 22-29 Zaragoza
Nineteenth International Congress of History of Science. The Congress will consist of Symposia, which will address themes of special interest, Scientific Sections devoted to the various branches and periods of the history of science and technology, and Poster

Sessions. Contact the Congress Office, Facultad de Ciencias (Matemáticas), Ciudad Universitaria, E-50009 Zaragoza, SPAIN; phone (76) 357-180; fax (76) 565-852; e-mail ichs@cc.unizar.es.

- 1994 October Newcastle, Australia
Third Australian History of Mathematics Conference. Details will be forthcoming at a later date.

HPM in Toronto

The quadrennial international HPM meeting will take place from August 12 to 14, 1992 at Victoria College of the University of Toronto. The scientific program will consist of approximately six plenary talks of one hour each and several sessions of shorter talks. The plenary speakers include

- Evelyne Barbin (Université Paris XIII, France) *The Role of Problems in the History and Teaching of Mathematics*
- Ubiratan D'Ambrosio (UNICAMP, Brazil) *Historiographical Approach to the History of Mathematics*
- Victor J. Katz (University of the District of Columbia, U.S.A.) *Combinatorics and Induction in Medieval Jewish Mathematics*
- Israel Kleiner (York University, Canada) *A History-of-Mathematics Course for Teachers*
- Joanna and Steven Schot (American University, U.S.A.) *The Hydrodynamics of Leonardo da Vinci*
- Frank Swetz (Pennsylvania State University, U.S.A.) *The Enigmas of Chinese Mathematics*

Many of the other speakers were listed in the November Newsletter. Those who were not listed earlier include (with their topics if available)

- Leonel Morales Aldana (Universidad Francisco Marroquin, Guatemala) *Mayan Geometry*
- Roberto Ribeiro Baldimo (Sao Paulo, Brazil) *The Theoretical Framework of Lacan-Baudrillard-Foucault in the Explanation of some Situations Emerging from Solidarity Groups Pedagogy in Calculus Courses*
- Janet Heine Barnett (University of Southern Colorado, U.S.A.) *History in the Liberal Arts Mathematics Course*
- Liliane Beaulieu (Université du Québec a Montréal, Canada) *Bourbaki's First Steps into University Teaching: The Courses of H. Cartan and R. de Possel*
- George Booker (Griffith University, Australia) *The Origins of Fraction Ideas: Implications for Teaching and Learning*
- Robert Brabanec (Wheaton College, U.S.A.) *Providing an Overview of the Historical Development of the Foundations of Mathematics*
- Ronald Calinger (Catholic University, U.S.A.) *The Berlin Mathematical Seminar under Kummer and Weierstrass*
- Attico I. Chassot (Porto Alegre, Brazil) *Arab Contributions to Science*
- Joelle Delattre (Phalempin, France) *Polemics in Geometry and Astronomy by the Ancient Greeks*
- John Fauvel (Open University, United Kingdom) *Plimpton 322 in the Classroom*
- José Valdir Floriani (Universidade Regional de Blumenau, Brazil) *Historical Data on Math Knowledge of First Math Teachers during the Colonial Period of Blumenau*
- Pat Gabriel (Chantilly, Va., U.S.A.) (with Sylvia Lazarnick and Sandra Williamson) *Teaching the History of Mathematics at the High School Level*
- Don Gallagher (Bend, Or., U.S.A.)
- Dorothy Goldberg (Kean College, U.S.A.) *An International Studies Approach to the History of Mathematics*
- Ivor Grattan-Guinness (Middlesex Polytechnic, United Kingdom)
- Michèle Gregoire (Lycée Lavoisier, France) *The Measure of the Terrestrial Meridian in the Classroom*
- Costel Harnasz (Manchester, United Kingdom) *Do You Need To Know How It Works? Lessons from the History of Calculating Devices*
- Barnabas Hughes (California State University, Northridge, U.S.A.) *Advocating History of Mathematics in the Classroom*
- H. N. Jahnke (Universität Bielefeld, Germany) *Algebraic Analysis from Euler to Klein*
- Arthur V. Johnson (Hudson, N.H., U.S.A.) *Using History in Middle/Junior High School Grades*
- Marisol de Mora-Charles (Barcelona, Spain)
- Donovan van Osdol (University of New Hampshire, U.S.A.)
- David Pengelley (New Mexico State University, U.S.A.) *Great Theorems: The Art of Mathematics*
- Helena Pycior (University of Wisconsin, Milwaukee, U.S.A.) *Historical Approach to Mathematics and Literature*
- Luis Radford (Université du Québec a Montréal, Canada) *Education, Society and Mathematics in Central America in the Colonial Period*
- V. Frederick Rickey (Bowling Green State University, U.S.A.) *Using History in Teaching Calculus*

- Lawrence Shirley (Towson State University, U.S.A.) *Working Toward a Lively History of Mathematics Course for Teachers*
- James Tattersall (Providence College, U.S.A.) *How Many People Ever Lived?*
- Erica Voolich (Somerville, Ma., U.S.A.) *"Humanizing" the Middle School Math Class*
- Greisy Winicki (Weizmann Institute, Israel) (with Shmuel Avital) *History of Mathematics in the Classroom via Historical Problems*

The social program at the meeting includes a guided tour to the Rare Book Room of the University of Toronto Library on the afternoon of August 11, a banquet on the evening of August 12, a trip to Niagara Falls and a picnic lunch there on the afternoon of August 13, coffee and tea breaks as well as lunch on August 12 and August 14, and a wine and cheese gathering on August 12 and probably also on August 14. The registration fee to cover all of this is \$100 (Canadian). The fee for an accompanying guest is \$75 (Canadian). To register, please fill out the registration form in this Newsletter and mail it with your certified check or money order (in Canadian or U.S. funds) or with your VISA or MASTERCARD number to Israel Kleiner, Department of Mathematics and Statistics, York University, 4700 Keele, North York, Ontario, CANADA M3J 1P3. (The amounts for U.S. funds, if paid by certified check or money order, are \$90 for the participant and \$67.50 for an accompanying guest. If you pay by VISA or MASTERCARD, the charge will be made in Canadian funds and converted by your bank.)

Accommodations will be provided at Victoria College. The room rates are \$42 (single) and \$60 (twin) (Canadian funds) and include breakfast each morning. The rooms are equipped as study bedrooms. Each room is provided with fresh linen, towels and soap. The washrooms are shared amongst the guests and are located a few steps from each room. Tennis courts on the

premises are available upon request. One night's nonrefundable deposit is required to make a reservation. This can be done on the accommodation form in this Newsletter. (Note that this form is separate from the registration form.) Again, payment must be made by certified check or by VISA or MASTERCARD. You can mail in the form to Victoria University, 140 Charles Street West, Toronto, Ontario, CANADA M5S 1K9, or you can handle the entire accommodation process by phone by calling (416) 585-4524 and using your credit card. Be sure you mention that you are attending the HPM meeting. You can also fax the form to (416) 585-4584.

If you wish to stay at a hotel, you will need to make your own arrangements. Nearby hotels, with approximate rates for doubles and telephone numbers, all with area code 416, include the Venture Inn (\$104; 964-1220), the Park Plaza Hotel (\$165; 924-5471), the Four Seasons Hotel (\$265; 964-0411), the Brownstone Hotel (\$61; 924-7381), the Carlton Inn Hotel (\$65; 977-6655), the Delta Chelsea Inn (\$95; 595-1975), the Ramada Renaissance on Bloor (\$165; 961-8000), and the Sutton Place Hotel Kempinski (\$240; 924-9221).

HPM in Quebec

HPM will participate in ICME-7 itself in Quebec. We have been allotted four 90-minute sessions. There will be three themes of the sessions:

- History of Mathematics and Pedagogical Problems
- History of Mathematics as a Cultural Approach to Solving Problems
- Historical Problems in the Classroom

There will be two speakers in each session. The speakers and their topics (if available) are

- Otto Bekken (Agder College, Norway) *Abel and Uniform Convergence*
- John Fauvel (Open University, United Kingdom) *Empowerment Through Modelling: the Abolition of the Slave Trade*

- Paulus Gerdes (Higher Pedagogical Institute, Mozambique)
- Michèle Gregoire (Lycée Lavoisier, France) *History of Mathematics for the Classroom: the Volume of a Pyramid with Pupils*
- V. Frederick Rickey (Bowling Green State University, U.S.A.) *The Necessity of History in Teaching Mathematics*
- Maggy Schneider (Faculté Universitaire de Namur, Belgium) *Reactions of pupils facing the concept of "indivisible" and paradoxes resulting from undue use of this concept*
- Man-Keung Siu (University of Hong Kong, Hong Kong) *Integration in Finite Terms, from Liouville's Work to the Calculus Classroom of Today*
- Jan van Maanen (Rijksuniversiteit Utrecht, Netherlands) *New Maths May Profit from Old Methods*

Each of these speakers will speak for 35 minutes. For each of the four sessions, there will be a respondent to comment on the talks. The respondents include Frank Swetz (Pennsylvania State University, U.S.A.), Evelyn Barbin (Université Paris XIII, France), and Israel Kleiner (York University, Canada). The speakers will be introduced by Florence Fasanelli (SUMMA/MAA, U.S.A.), Victor J. Katz (University of the District of Columbia, U.S.A.), and Ubiratan D'Ambrosio (UNICAMP, Brazil). Each day, speakers will address the three levels of instruction, elementary, secondary and tertiary. Negotiations are underway with a publisher to publish these eight talks as well as some of the talks given in Toronto.

Put Toronto and Quebec on your calendar for August, 1992. There is much to see and do in both Toronto and Quebec, so bring your families and enjoy an exciting and stimulating twelve days.

ICME-7

ICME-7, the Seventh International Congress on Mathematical Education, will be held at Université Laval in the city of Québec, Canada, from August 17 to 23, 1992. The Congress will be organized into Plenary Sessions, Working Groups, Lectures, Topic Groups, Study Groups, a Mini-conference on calculators and computers, National Presentations, Projects, and Poster Sessions. The working groups, each to meet for four 90-minute sessions, will consider such topics as "Students' difficulties in calculus," "Multicultural and multilingual classrooms," "The role of geometry in general education," "The place of algebra in secondary and tertiary education," "Technology in the service of the mathematics curriculum," and "Mathematics education with reduced resources."

Some of these working groups will include material on the use of history. For example, subgroup 6 of the working group on the role of geometry, entitled "Geometry through its history," is being organized by John Fauvel (United Kingdom) and Roman Duda (Poland). The first session of the subgroup will deal with geometry through historical stories. It will focus on fairly gentle interactions in which the teacher encourages children's interest through telling or showing stories about geometrical practice or theory in the past. The second session, on geometry through instruments, will focus on what can be learned from geometrical instruments, especially past surveying instruments which can easily be built and demonstrated in the classroom. Pythagoras' theorem, issues of ratio and proportion, and other obvious curricular and cross-curricular benefits will be part of the discussion. The final session of the subgroup will consider geometry through texts. It will explore the use of old geometry texts for teaching geometry in the classroom and might well focus on the texts, methods, and approaches developed in France by members of IREMs.

The topic groups at ICME-7 will each meet for two 90-minute sessions. They include "Ethno-

mathematics and mathematics education," "Indigenous peoples and mathematics education," "The theory and practice of proof," "Mathematical games and puzzles," and "Mathematics and Ibero-American art." Again, there will be historical material discussed throughout. In particular, Israel Kleiner (Canada) and John Fauvel are organizing a part of the session on proof under the topic "Historical, epistemological, and practical aspects of proof," in which several speakers will give brief presentations on the cultural context of various proofs along with suggestions for using this context in teaching. Francine Abeles (United States) is organizing a 90-minute session on "Recent Developments in the Didactics of Proof." Anyone interested in presenting a short paper on that topic should write to her at the Department of Mathematics and Computer Science, Kean College of New Jersey, Union, NJ 07083, U.S.A. or send her a message via e-mail to fabeles@turbo.kean.edu.

About forty lectures will be scheduled on various topics, some of which will deal with history. Finally, some of the poster sessions will probably also deal with historical material. Full registration details and a schedule of fees are available in the Second Announcement, available by writing to ICME-7 at the address given in the Calendar.

Fourth Midwest Conference on the History of Mathematics

The Fourth Midwest Conference on the History of Mathematics will be held October 2-3, 1992, concurrently with the Twentieth Annual Mathematics and Statistics Conference at Miami University, Oxford, Ohio. Featured speakers will include Judith Grabiner, William Dunham, Victor Katz, and V. Frederick Rickey. There will be contributed paper sessions on Friday afternoon and Saturday morning. Authors wishing to contribute a 15-minute paper on the history of mathematics or the relationship of history and pedagogy of mathematics should send an abstract to David E. Kullman, Conference Director, Department of Mathematics and Statistics,

Miami University, Oxford, OH 45056, U.S.A. by June 1, 1992. Conference programs with information concerning preregistration and housing will be available after July 15, 1992.

Pan-American Conference on Pre-Columbian Mathematics, Astronomy and Modes of Thought

The first Pan-American Conference on Pre-Columbian Mathematics, Astronomy and Modes of Thought will take place at Universidad Francisco Marroquin, in Guatemala City, and in Tikal, in the northern part of Guatemala, from November 1 to November 6, 1992. The meeting is organized by the Sociedad Latinoamericana de Historia de la Ciencia y la Tecnología (SLHCT) and the Facultad de Ingeniería en Sistemas y Ciencias de la Computación (FISICC) at Universidad Francisco Marroquin.

The conference will be held in two separate cities: in Guatemala City, on the first and second of November, and the City of Tikal on the third, fourth, and fifth of November, returning to Guatemala City on the sixth of November. There are many Mayan cities of high importance throughout the Republic of Guatemala. Among them, Tikal is the most outstanding. It is in this city where the participants will spend three days to increase their knowledge about the Maya civilization.

The conference will be organized in terms of a plenary meeting, a symposium with guest speakers, informal sessions, poster sessions, and workshops. Anyone who would like to deliver a talk or present a poster at the poster session should send an abstract to the address below by March 30, 1992. The abstract may be written either in English or Spanish, the two official languages of the conference. The abstract should not exceed one written page of 27.5 cm. length and 21.0 cm. width with 3 cm. margins on each side. Begin the abstract with the title of the talk and your name and institution (centered). The abstract must be typed or printed with black ink on white paper so that it may be reproduced easily. Send

the abstract, or just write for information with your name, mailing address, and e-mail address, to Dr. Leonel Morales Aldana, FISICC, Universidad Francisco Marroquin, Apartado Postal 632-A, Guatemala, GUATEMALA. Telephone (502-2) 313890; Fax (502-2) 346896; E-mail internet: lmorales@huracan.cr or bitnet: huracan!lmorales@uunet.uu.net.

CSHPM in Charlottetown

The Annual Meeting of the Canadian Society for History and Philosophy of Mathematics will be held in Charlottetown, Prince Edward Island from May 28 to 30, 1992. Michael Closs of the University of Ottawa will be the guest speaker. His topic will be a topic in Ethnomathematics, the theme of the special session of the meeting. For information on the program, contact the program chair, Gerald Lenz, Department of Mathematics, St. John's University, Collegeville, MN 56321, U.S.A. General information about the Canadian society can be had from the Secretary, M. A. Malik, at the address given in the calendar.

Annual Meeting of HPM Americas Section in Nashville

The annual meeting of the Americas Section of HPM will be held during the annual meeting of the National Council of Teachers of Mathematics, this year in Nashville from April 1 to April 4. HPM will meet in the Jackson Room of the Doubletree Hotel on Thursday, April 2 from 4:30 pm to 7:30 pm and on Saturday, April 4 from 1:00 pm to 5:00 pm. After the Thursday session, the group will go out to dinner. The speakers at the meeting and their topics are:

- Joe Albree (Auburn University at Montgomery): "Antebellum Reform in Geometric Instruction and the *Mathematical Monthly*."
- Duane Deal (Ball State University): "Indiana and π ."

- Florence Fasanelli (SUMMA/MAA): "Women in Mathematics."
- Karen Michalowicz (Langley School, McLean, Va.): "Using Classroom Displays and Decorations in Middle School in Order to Enhance Mathematics Through the History of Mathematics."
- V. Frederick Rickey (Bowling Green State University): "Gauss and Wantzel on Constructing Regular Polygons."
- Katie O. Sowell (East Carolina University): "Hamilton's Icosian Calculus."

In addition there will be a discussion session dealing with the topic "Ideas for Using History in the Classroom." Everyone is encouraged to contribute to this discussion. Please bring along handouts to share, and think about ideas to contribute to the discussion.

There is still room on the program for additional presentations. We are especially interested in hearing from teachers at all levels about how they use history to enrich their classrooms. Individuals wishing to make a presentation, please send a title and abstract to Erica Voolich, 244 Summer St., Somerville, MA 02143. Phone: (617) 666-0666.

Second Australian History of Mathematics Conference

Robert Hayes, Hawthorn Institute of Education

The Second Australian History of Mathematics Conference was held at Monash University, Clayton, Victoria, Australia, 3168 from October 2-4, 1991. The conference was convened by Professor John Crossley of Monash, and forty mathematicians and mathematics educators from many parts of Australia attended.

The conference began with a reception to launch the Bibliography of Material from the Monash University Library Rare Book Collections. Bound copies of the Bibliography are

available from John Crossley at the above address for \$15(AUD) per copy. A superbly arranged exhibition of mathematics material from the collection was displayed in the Monash main library throughout October, including some of the great mathematical classics, by Euler, Jacobi, Lagrange, Laplace, Newton and Poincaré, mathematically inclined works by famous scientists, philosophers and writers such as Boyle, Descartes, Galileo, Diderot and Voltaire, plus four centuries of other mathematics books, from textbooks to recreations.

Thirteen papers were delivered during the conference: A. W. C. Lun (Monash University), *The Logic of Lui Hui and Euclid*; Bob Berghout (University of Newcastle), *The early history of conic sections*; John Clark (University of Melbourne), *S. D. Poisson and the mathematization of electrostatics*; Winifred Frost and Bob Berghout (University of Newcastle), *Book 3 of Pappus' Mathematical Collection*; Marta V. Chiba (Monash University), *Bibliometrics: a quantitative approach to the study of the history of mathematics*; Michael Deakin (Monash University), *How the Laplace transform won the day*; Jim Cross (University of Melbourne), *Dirichlet, his life and work*; Bob Hayes (Hawthorn Institute of Education), *History as an instrument of reteaching and remediation*; John Stillwell (Monash University), *Equations (versus groups, rings and fields)*; Ken Clements and Nerida Ellerton (Deakin University), *Have standards fallen in school mathematics in Australia?*; E. Seneta (University of Sydney), *The error in approximating a binomial sum by a normal integral*; C. H. J. Johnson (CSIRO), *ETA 10: a lost chapter in computational mathematics*; and John Crossley (Monash University), *Symbolic computation: two unifying principles*.

The Third Australian History of Mathematics Conference is being planned for the University of Newcastle in October, 1994. Winifred Frost and Bob Berghout are making the necessary preliminary arrangements.

On the History of Mathematics in Sub-Saharan Africa

Paulus Gerdes presented a paper entitled "On the History of Mathematics in Sub-Saharan Africa" at the Third Pan-African Congress of Mathematicians held in Nairobi, Kenya from August 20 to August 28, 1991. The introduction follows:

"In her classical study *Africa Counts: Number and Pattern in African Culture*, C. Zaslavsky presented an overview of the available literature on the history of mathematics in sub-Saharan Africa. She discussed written, spoken and gesture counting, number mysticism, concepts of time, numbers and money, weights and measures, record-keeping (sticks and strings), mathematical games, magic squares, graphs, geometric form. D. Crowe contributed a chapter on geometric symmetries in African art. Since the publication of Zaslavsky's overview, many scholars, students, mathematics teachers and laymen alike - both in Africa and abroad - became interested in the mathematical heritage of Africa south of the Sahara. The African Mathematical Union (AMU) included a History section in the 2nd Pan-African Congress of Mathematicians (Jos, Nigeria, 1986) with as one of its purposes "to encourage more reports and exchanges of references and ideas on historical studies of African mathematics." The success of this section stimulated the formation of the AMU Commission on the History of Mathematics in Africa (AMUCHMA). In order to stimulate research on the history of mathematics in Africa in general, and to promote the propagation of the research findings and the exchange of information in this field, AMUCHMA publishes regularly since 1987 a newsletter in English, French, and Arabic. In this paper, an overview of research findings on or related to the history of mathematics in sub-Saharan Africa is presented. Topics like counting and numeration systems, numerology, mathematical games and puzzles, geometry, graphs, Islam and mathematical development, international connections, history of mathematics cur-

ricula will be included. Also attention will be paid to the objectives of research on the history of mathematics in Africa, to methodology, to the relationship with ethnomathematical research and to the uses of research findings in mathematics education. Possible directions for further research will be identified."

Not only does Gerdes survey the topics indicated, but he also includes a comprehensive 233-item bibliography of sources from which further information can be found. Anyone in the United States wishing a copy of this paper should send a self-addressed business size envelope with 52 cents postage affixed to the editor at the address on the front page of this newsletter. If you live elsewhere, please send appropriate international reply coupons (for a weight of 60 grams) or else contact John Fauvel at the address on the front page. I highly recommend this paper to anyone interested in using the history of mathematics in Africa in teaching mathematics.

Lusona: Geometrical Recreations of Africa

Paulus Gerdes has recently published a book entitled *Lusona: Geometrical Recreations of Africa*, in which he discusses and illustrates the graphing procedures of the Tschokwe people. The material he includes can easily be adapted for use in courses in graph theory or group theory. One can use the illustrations to make overhead transparencies of the material for use in class. The book is published by the Instituto Superior Pedagógico in Maputo, Mozambique. In order to help raise funds for the ISP to buy books, journals, computers, software, etc., the ISP Support Group in the United States is distributing this book for a donation of, at least, ten dollars. If you wish a copy, please send your name, address, phone number, and e-mail address, along with at least ten dollars (U.S.) per copy to ISP Support Group, c/o Arthur B. Powell, Academic Foundations Department, Rutgers University, Newark, NJ 07102, U.S.A. Please make your check out to Arthur B. Powell

(ISPSG).

For the Learning of Mathematics

The June, 1991 issue of *For the Learning of Mathematics* is a special issue on History in Mathematics Education, edited by John Fauvel. It consists of papers arising from contributions made to the international conference on history in mathematics education (HIMED 90) held in Leicester in April, 1990. Most of the articles demonstrate explicitly how history has been and can be used in teaching at various levels. To receive a copy of the issue, send \$9 (Canadian) or \$8(U.S.) to FLM Publishing Association, 206-1273 Merklin Street, White Rock, B.C., CANADA V4B 4B8, or send 4.50 pounds sterling to John Fauvel at the address on the front page. Make checks or money orders payable to FLM.

Query about Michael Maddox

Irving H. Anellis, a reader of this Newsletter and the editor of *Modern Logic*, would appreciate any information regarding the identity of Michael Maddox. Sources on the history of Russian art, for example L. Kelly, ed., *Moscow: A Traveller's Companion* (New York: Atheneum, 1984), pp. 182-183, quoting from S. Edwards, *The Russians at Home: Unpolitical Sketches* (London, 1861), describe Maddox as an English mathematician and founder in 1780 under the patronage of Empress Catherine the Great of Moscow's Petrovskii Art Theater. He described himself as a graduate of Oxford University, and his passport indicated that he was a professor of mathematics at Oxford. He was appointed mathematics tutor to tsarevich Paul by Empress Catherine. He came to Russia via India and was called "the Cardinal" because he habitually wore a scarlet cloak. Anyone with information about Maddox should communicate directly with Irving Anellis at Box 1036, Welch Avenue Station, Ames, IA 50010, U.S.A.

Augment: Curriculum Revision for Mathematical Enrichment

In response to nationwide difficulties with teaching calculus at the college level, the Fund for the Improvement of Postsecondary Education (FIPSE) is sponsoring a three-year project at Augsburg College, Minneapolis, Minnesota to develop an innovative sequence of mathematics courses. The two-year sequence will replace the traditional introductory calculus and linear algebra courses for mathematics and science majors.

The resulting courses will

- emphasize a deeper understanding of calculus and linear algebra concepts than they do now, with less stress on mechanics and more work with concepts;
- contain more breadth of mathematical ideas than the current sequence provides – in geometry, probability, combinatorics, algebra, graph theory, and number theory;
- stimulate thinking about connections among ideas in mathematics and between those ideas and other aspects of civilization;
- gradually increase students' logical thinking abilities over two years, so that those going on to upper-division mathematics courses will be able to write proofs at that level;
- include explicit attention to mathematical reading, so that students will be able to read mathematics texts to fill in gaps in their understanding; and
- involve students extensively in mathematical writing, both for communication and as a tool for thinking.

The first year of this course has now been developed in detail. It is basically organized historically, and makes explicit use of historical ideas and the historical development of mathematics. Thus, Part I is entitled "Greek Mathematics: Geometry and Number Theory." In

that part, there are sections on geometric constructions, on shaped numbers, on the concept of similarity, on Archimedes and exhaustion, and on trigonometry, among other ideas. The course then moves on in Part II to "Medieval and Renaissance Mathematics: Algebra and Extensions to Geometry." Among the topics considered are Cardano and the solution of the cubic, complex numbers and equation solving, projective geometry and its relation to painting, coordinate geometry, and the tangent and area problems. In Part III, "Seventeenth-Century Mathematics: Probability and Derivatives," the course deals with the fundamental counting principle in probability, the idea of expected value, the notion of a function, and various standard elementary topics in the calculus. The material which will bring the second-year course into the twentieth century is currently under development.

Following on the idea of Galileo, the course material is tied together by a series of discussions among three "typical college students" taking the course. The students relate the material to other ideas and express questions, amazement, impatience, and occasionally delight or exasperation with the text. Much of the text as used consists of articles from various sources, but the authors at Augsburg have contributed many introductions and comments to set the articles in their historical context and connect them with what has gone before.

This attempt to design an entire two-year sequence using a historical perspective is a comprehensive approach to using history in teaching mathematics. After the development is complete, FIPSE will encourage its use in other colleges around the country. If you would like information on the course now, however, and perhaps a copy of the course material so that you may try it out in your own teaching, contact the project director, Larry Copes, at the Department of Mathematics and Computer Science, Augsburg College, Minneapolis, MN 55454, by phone at (612) 330-1064, or by e-mail at copes@augsborg.edu.

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, D.C. 20064, U.S.A.

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APPLICATION FOR ACCOMMODATION
AT VICTORIA UNIVERSITY FOR HPM MEETING, August 12-14, 1992

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