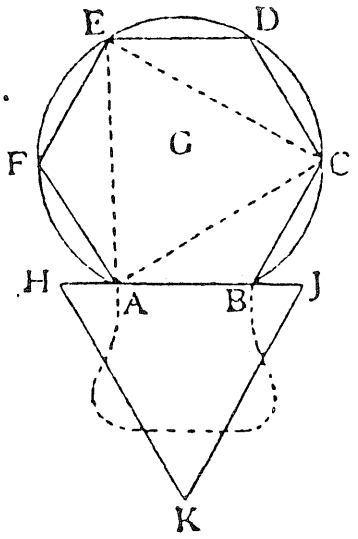
BULLETIN
CSHPM/SCHPM



Charles Dodgson's "Will-o'-the- Wisp"

The reader, who has ever tried to make such discoveries for himself, will sympathize with my anguish as with clasped hands I gazed after the retreating meteor, and murmured 'Beautiful Star, That art so near and yet so far!'

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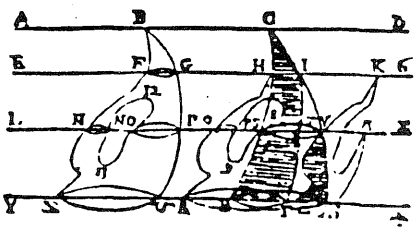


Canadian Society for History and Philosophy of Mathematics
Société canadienne d'histoire et de philosophie des mathématiques

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

Material should be sent to :

Roger Herz-Fischler, Department of Mathematics and Statistics, Carleton University, Ottawa, Ontario, K1S-5B6.

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, à la Babylonian or by other methods. It would be appreciated if those submitting more than simple news items would send it them in final typed form so that the text can be reproduced as is.

CSHPM/SCHPM

The 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. Kindly include your electronic mail address if you have one.

ANNUAL MEETING/REUNION ANNUEL

The annual meeting will be held at the University of Windsor on May 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; tel. (709) 737-8783/84.

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) 527-2105.

COVER

The drawing and the quote are taken from a text, whose source is presently unknown, by Charles Dodgson (Lewis Carroll). For the text itself, kindly supplied by Francine Abeles, and to understand the reason for Dodgson's enthusiasm kindly turn the page.

CURRENT WORK AND INTERESTS

Francine Abeles, a former member of the council of the CSHPM/SCHPM, is a professor in the Department of Mathematics and Computer Science at Kean College of New Jersey. She is currently working on Charles Dodgson's mathematical phamplets. Francine has already published several articles dealing with Dodgson's work, but in addition to this aspect of her career her interests and research have been many and varied. An outstanding speaker, Francine's talk on Lewis Carroll's "Letter Register" at the 1987 McMaster meeting was particularly well received.

"I think my interest in Charles L. Dodgson, Lewis Carroll, was predetermined at the outset of my career. Not wanting to give up two years, I wrote my doctoral dissertation in Germany on an historical topic in geometry while my husband was on active military duty there. I returned to Columbia University, thesis in hand, but with coursework to complete. The oddity of it - a sort of backward approach! A year later, the degree granted, I took up a position as an assistant professor in the Department of Mathematics at Kean College. Three years later I received tenure and a promotion to associate; five years after, I became full professor.

In the next several years I published nine artices on geometric topics in New Jersey and New York state mathematical journals and in Mathematics Magazine and The American Mathematical Monthly. The best of them is "The Affine Theorems of Pasch, Menelaus, and Ceva" Mathematics Magazine 45(1972), 78-82. By the end of 1975, I had three small children, ages 7, 4 and 5 months, and was absorbed with bedtime reading. Who were some of the children's favorite authors? Beatrix Potter and Lewis Carroll. So it began.

Historia Mathematica [3(1976)] published the first Lewis Carroll article on multiplication in changing bases. Dodgson's work on mathematics on the mathematics of politics and an appointment as visiting member at the Courant Institute of Mathematical Sciences at New York University in 1976-77 sparked a new interest for me in the mathemtics of voting and bargaining. This led to: "C.L. Dodgson and Apportionment for Proportional Representation", Bulletin of the Indian Society for the History of Mathematics, 3(1981), 71-82 and "The Mathematical-Political

Papersof C.L. Dodgson" in Lewis Carroll: A Celebration (E. Guiliano ed.), N.Y., Potter,1982. Geometry was still part of my research interests with inequalities for a simplex and the number "e" appearing in the Journal of Geometry 15(1980), 149-152.

By this time I was becoming quite interested in computer science. Kean offers an undergraduate major in the field, the first at a New Jersey state colege. When the opportunity arose to return to school, at state and federal expense, to "retool", I took it. With the complete support of my husband and the acquiescence of our children, I gave up a year and a half of "living" to be rewarded with a master's degree in computer science by Steven's Institute of Technology in 1986. My last article before going down into the rabbit-hole: "Power in Decisions Among Multiple Alternatives", Journal of Information and Optimization Science, 5(1984), 43-8. and the first upon reappearing: "Determinants and Linear Systems:Charles L. Dodgson's View", British Journal for the History of Science, 19(1986), 331-5.

Currently, I am editing the volume of Dodgson's mathemtical pamphlets, part of a projected six volume edition of all of Lewis Carroll's unpublished pamphlets, to be published by the Universtiy of Virgina Press. last Year I had the good fortune to teach a graduate course, the contemporary scene, in the liberal studies program. We do have an undergraduate course in the history of mathemtics for mathematics majors, but I haven't been able to teach it for a number of years. It's rather popular among the instructional staff. Artificial intelligence and operating systems take up the slack."

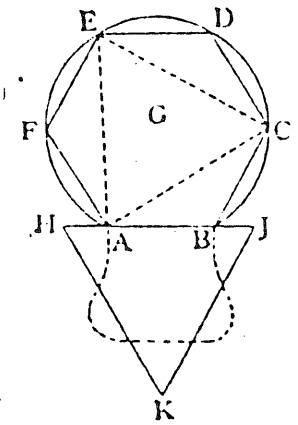
[Note: The projected publication date of the Carroll project is 1998, the centennial of Dodgson's death. Other volumes include Games and Puzzles (Martin Gardiner), Elections (Joel Bruband), Logic and Philosophy (Peter Heath)]

PRINCIPIA MATHEMATICA

Said Russell to Alfred North Whitehead,
"Your discourses in prose are quite blighted.
Use the logic and rules
Of mathematics as tools
And your reasoning's wrongs will be righted."

Edward C. Devereux

[from Proceedings of the American Philosophical Association, 61(1987), 136; submitted by Irving Anellis]



One effort of mine was so temptingly near success that I think it worth recording as a curiosity. I inscribed the Hexagon *ABCDEF* in the Circle, leaving the lowest segment not drawn as yet. Then I joined *AC*, *CE*, *EA*, thus forming an equilateral Triangle with longer sides than those of the Hexagon. "Now," I thought, "if I place *this* Triangle against the base *AB*, it will be easier to keep the segment inside it, than if it were merely the Triangle *ABG* turned over *AB* as a hinge." On drawing it, I was encouraged by noticing that the segment couldn't possibly reach as far as the vertex *K*, seeing that the altitude of *HJK* could easily be proved *greater* than a radius, while the altitude of a Segment was obviously *less* than a radius. Hence, if the Segment declined to lie *within* the Triangle (which would have instantly proved it less than the Hexagon), it was bound to wander in and out (like the dotted Line I have drawn) and cut the Triangle in 6 places. "Then all that needs to be done *now*," I said, "is to prove that, if an equilateral Triangle will go *inside* a Circle, you cannot place that same Triangle so as to lap *over* the Circle, with each vertex projecting beyond the circumference. What sane man would expect, on finding an equilateral triangular board, which would exactly fit *inside* the mouth of a well, to be able to lay that same board safely down, with its three corners resting *on the edges* of the well? Surely the thing is absurd!" And it almost looked as if I had caught the Will-o'-the-Wisp at last! I began my proof, and for a while all went well—you can prove that such a Triangle cannot rest *on* the Circle, with its vertices outside, *so long as the centre of the Circle falls inside the Triangle.* But alas, alas! So soon as I tried a proof of the only remaining case, where the centre of the Circle falls *outside* the Triangle, the bright phantom glided out of my grasp! For I discovered *two* melancholy facts; one, that you *can* make an equilateral Triangle rest on a Semicircle, with all its vertices outside—only it will be too large to go inside the Circle; the other, that you *can* make a certain Triangle rest so, and one that is small enough to go inside the Circle—only, in that case, it won't be equilateral! The reader, who has ever tried to make such discoveries for himself, will sympathize with my anguish, as with clasped hands I gazed after the retreating meteor, and murmured "Beautiful Star, That art so near and yet so far!"

MEETINGS AND SPEAKERS

The Humanities Institute at Simon Fraser held a symposium entitled "Issac Newton and His Influence" on November 20, 1987. Among the speakers were Len Berggren (SFU), "Newton's Mathematical Discoveries"; Hannah Gay(SFU); "Newton and the Philosophers: How has Newton's Metaphysics been approached, 1687-1987?"; Stephen Straker (UBC), "The Slaying of the Triumphant Beast and the Restoration of True Religion, in which is contained an account of the Theological, Historical, and Metaphysical Foundations of Sir Issac Newton's Mathematical Principles of Natural Philosphy".

Le deuxième colloque maghrèbin sur l'histoire des mathématiques arabes aura lieu le 1,2,3 décembre 1988 à Tunis. Pour plus de détails veuillez contacter Mr. Mahdi Abdeljaouad, Institut Superieur de l'Education et de la Formation Continue, 43 rue de la liberté, 2019 - Le Bardo, Tunisie, tél. 261.329.

The Charles S. Peirce Sesquicentennial International Congress will be held at Harvard in early September 1989. Papers are called for in any of the fields (mathematics, philosophy, history of Science ...) in which Peirce worked. For details contact: K.L. Ketner, Chairperson, Organizing Committee, Institute for Studies in Pragmaticism, 304K Library, Texas Tech University, Lubbock, Texas, USA 79409.

A symposium on "Philosophical Issues in the Development of Mathematics" took place in Moscow August 21, 1987 as part of the VIIIth International Congress of Logic, Methodology, and Philosophy of Science under the chairmanship of Irving Anellis. Among the talks given were: B. Chendov (Bulgaria), "The Stages of Development of Mathematics and of the Philosphy of Mathematics"; N. Neipovoda, " What is Mathematics- Natural, Humanitarian, Technical Science, or Religion or Sport?" and I.P. Petrov, "Some Remarks about the Nature of Mathematics and Regularities of its Development". Among the announcements made was that concerning the reestablishment of the journal Philosophia Mathematica. Participants also discussed the prospect of creating an International Philosphy of Mathematics association and a division for Philosphy of Mathematics within the International Union of History and Philosphy of Science. For further details contact Irving Anellis.

The British Society for the History of Mathematics will meet on June 4, 1988 at 1500 at the London Science Museum to see a collection of instruments used for teaching mechanics etc. to the Royal Children in the reign of George III. The September meeting in Leicester will have as its main theme the use of history in the teaching of mathematics. There will also be a general session. For further details contact: Dr. Ronald Gowing, Royal Institution Centre for History of Science and Technology, 21, Albemarle St., London W1X 4BS or I. Grattan-Guinness, 34 Hillside Gardens, Barnet, Herts, EN5 2NJ, England

Le groupe de recherche en "Philosophie de l'Art et de la création" du C.N.R.S. organise un colloque fin avril-début mai 1989 sur le sujet "La Poiétique Comme Science et Comme Philosophie de la Création". Parmi les thèmes sera "La poiétique et la création dans les sciences: création et recherche". Pour les détails veuillez contacter: René Passeron, Institut d'Esthétique et des Sciences de l'Art, 162 rue Saint-Charles, 75740, Paris.

ANNOUNCEMENTS

Ed Barbeau (Toronto) has informed us that the College Mathematics Journal is planning a new feature dealing with the history of mathematics.

La Société Française d'Histoire des Sciences et des Techniques créée en 1980 a un triple but de coordination de travaux, d'établissement de structures convenables de recherche ou d'enseignement et de diffusion. Le siège de la Société se trouve à 12, Rue Colbert, 75002, Paris. La cotisation est de 90F. La Société édite les Cahiers d'Histoire et de Philosophie des Sciences. Le n° 11 contient l'article de F. Rostand, "Procédés de la pensée mathématique".

NEWS/ACTIVITES

Jean Dhombres, professor at the Université de Nantes, president of the Société Française d'Histoire des Sciences et des Techniques and formerly the attaché scientifique of France in Canada, will be giving several conferences in August and September 1988 in North America and would be interested in meeting colleagues, visiting universities and attending meetings etc. Insitut de Mathématiques et d'Informatique, 2, rue de la Houssinière, 44072, Nantes, tél. (40)74.50.70 - poste 295.

Marcia Ascher (Ithaca) is spending the year 1987-1988 as a scholar in residence at the Getty Centre for the History of Art and the Humanities in Santa Monica, California.

Israel Kleiner (York) spoke at Carleton University in February on the history of noncommutative ring theory.

PUBLICATIONS

Anellis, Irving. "Sof'ja Aleksandrovna Janovskaja (1896-1966)" in L. Grinstein; P. Campbell (ed.), Women of Mathemtics: A Biobibliographic Sourcebook, Greenwood Press, 1987.

Anellis, Irving. "Projects: Mathematical Logic in the Soviet Union, 1917-1980", in History and Philosophy of Logic, 8(1987), 71-76.

Archibald, Tom. "Carl Neumann versus Rudolf Clausius on the propagation of electrodynamic potentials", American. J. Physics, Sept. 1986.

Ascher, Marcia; Ascher, Robert. "Ethnomathematics", Historia Scientarium, 24(1986), 125-144.

Berggren, Len. "Review of R. Roshed, Diophante: Les arithmétiques, Historia Mathematica, 14(1987), 386-389.

Closs, Michael. "The Planet Venus and Temple 22 at Copan", Indiana, 9(1984), 221-244.

D'Ambrosio, Ubiratan. Etnomatematica: Raizes Socio-Culturais da Arte ou Tecnica de Explicar e Conhecer, Campinas, 1987. This volume contains several articles including: "Socio-cultural Influences in the Transmission of Scientific Knowledge and Alternative Methodologies"; "Socio-cultural Foundations of Mathematics and Science Education" and "New Fundamentals of Mathematics for Schools".

Dhombres, Jean. "French Mathematical Textbooks from Bézout to Cauchy", Historia Scientarum, 28(1985), 91-137.

Gupta, R.C. "Jinabhadra Gani and Segment of a Circle Between Two Parallel Chords", Ganita Bharati, 7(1985), 25-26.

Gupta, R.C. "Madhavacandra's and Other Octagonal Derivations of the Jaina Value $= 10$. Indian Journal of the History of Science, 21(1986), 131-139.

Katz, Victor. "The Calculus of the Trigonmetric Functions", Historia Mathematica, 14(1987), 311-324.

Laird, Roy. "The Scope of Renaissance Mechanics", Osiris, 2nd series, 2(1986), 43-68

Schubring, Gert. "Essais sur l'histoire de l'enseignement de mathématiques particulièrement en France et en Prusse", Recherches en Didactiques des Mathématiques, 5(1985), 343-385.

The journal For the Learning of Mathematics occasionally publishes articles in the intersection of mathematical history and mathematical education. The following have appeared in past issues.

ARCAVI, Abraham; BRUCKHEIMER, Maxim; BEN-ZVI, Ruth (1982) Maybe a mathematics teacher can profit from the study of the history of mathematics. 3, 1: 30-37

ARCAVI, Abraham; BRUCKHEIMER, Maxim; BEN-ZVI, Ruth (1987) History of mathematics for teachers: the case of irrational numbers. 7, 2: 18-23

BOS, H.J.M. (1984) Mathematics and its social context: a dialogue in the classroom with historical episodes. 4, 3: 2-9

D'AMBROSIO, Ubiritan (1985) Ethnomathematics and its place in the history and pedagogy of mathematics. 5, 1: 44-48

DHOMBRES, Jean (1981) Pédagogie et utilisation de l'histoire: des tensions contradictoires. 2, 2: 10-15

FREUDENTHAL, Hans (1981) Should a mathematics teacher know something about the history of mathematics? 2, 1: 30-33

KATZ, Victor J. (1986) Using history in teaching mathematics. 6, 3: 27-33

KLEINER, Israel (1986) Famous problems in mathematics: an outline of a course. 6, 1: 31-38

PIMM, David (1982) Why the history of mathematics should not be rated X. 3, 1: 12-15

SCHUBRING, Gert (1987) On the methodology of analysing historical textbooks: Lacroix as textbook author. 7, 3: 41-51

STOWASSER, Roland (1982) A textbook chapter from an idea by Pascal. 3, 2: 25-30

STOWASSER, Roland; BREITEIG, Trygve (1984) An idea from Jakob Bernoulli for the teaching of algebra: a challenge for the interested pupil. 4, 3: 30-38

TAHTA, Dick (1986) In Calypso's arms. 6, 1: 17-23

A number of university libraries in Canada and elsewhere hold copies of the journal. Subscription and other information about it can be obtained from David Wheeler, Mathematics Department, Concordia University: Loyola Campus, Montreal, Quebec H4B 1R6.

CITATIONS

"In the same manner our Sheiks... have said that the study of geometry is for the spirit what the repeated use of soap over a long period is for clothing from which it washes stains and takes away spots." - Ibn Khaldoun in F. Woepcke, "Traduction d'un chapitre des 'Prolégomènes' d'Ibn Khaldoun relatif aux sciences mathématiques", Atti dell'Accademia pontifica dei Nuovi Lincei, 10(1856), 236-248, p. 244.

Je congnois cheval et mulet,
Je congnois leur charge et leur somme,
Je congnois Bietris et Belet,
Je congnois vision et somme,
.....
Je congnois tout, fors moy mesmes

I know horses and mules
I know the load they can carry
I know Marys and Janes
I know counting and adding
.....
I know all, save myself.

Extrait de la ballade "Des menus propos [of small talk]" François Villon; écrit vers 1455. Dans The Complete Works of François Villon, A. Bonner, rédacteur et traducteur, New York, David McKay, 1960, p. 136.

"In a way mathematics is the only infinite human activity. It is conceivable that humanity could eventually learn everything in physics or biology. But humanity certainly won't ever be able to find out everything in mathematics because the subject is infinite" - Paul Erdös. Cited in Paul Hoffman, "The Man Who Loves Only Numbers" , The Atlantic Monthly, November, 1987,60-74, p. 71

"The evolution of mathematics in New France followed closely on the heels of this newly acquired stature. Although there were no new discoveries, the quality of teaching was virtually equally to that found in colleges in France. The Jesuits founded the Collège de Québec in 1635 and started teaching intermediate mathematics there in 1651. Until 1760 students were taught arithmetic, the rudiments of second-degree or quadratic equations, trigonometry and a little differential and integral calculus - all in one of the two final years of the 8-year course of studies." - Louis Charboneau, article "History [of mathematics] in Canada", The Canadian Encyclopedia.