BULLETIN
CSHPM/SCHPM

Thus if $f(x,y,z)$ be any fixed fo., & $\underline{k}$ consists of any selection of the classes which are of the form $\hat{x}\,f(\hat{x},y,z)$, then $\underline{k}$ is of the desired kind, i.e., putting cls'u in place of $\underline{k}$,

$$\vdash :: v \in \text{cls}'u . \supset : (\exists y,z) . v = \hat{x}\,f(\hat{x},y,z) :. \supset . N'c'\text{cls}'u > N'c'u$$

Dem.

$$x \in u . \supset_x . \iota'y \, f(x,y,z) \in \text{cls}'u \quad \text{Const.}$$

$$\vdash . \text{Hp} . \text{Const} . \supset :: x \in u . \supset_x : (\exists y,z) . \iota'y \, f(x,y,z) = \hat{x}\,f(\hat{x},y,z) :.$$

$$\supset_x : (\exists y,z) : x \in \iota'y \, f(x,y,z) . \equiv . f(x,y,z) :.$$

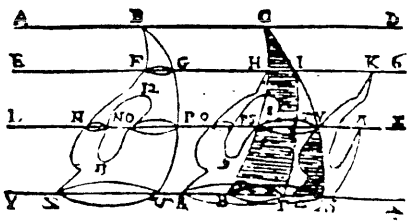
$$\supset_x :. x \in \iota'y \, f(x,y,z) . \equiv : (y,z) : \iota'y \, f(x,y,z) = \hat{x}\,f(\hat{x},y,z) . \supset . f(x,y,z) ::$$

$$\supset :: x \in u . x \in \iota'y \, f(x,y,z) . \equiv_x :. x \in u : (y,z) : \iota'y \, f(x,y,z) = \hat{x}\,f(\hat{x},y,z) . \supset . f(x,y,z)$$

$$\supset :: \exists'_x (x \in u . x \in \iota'y \, f(x,y,z)) :: \supset \vdash \text{Prop} .$$

-from the Bertrand Russell Collection at McMaster University. Courtesy of Dr. Albert Lewis, Director of the Bertrand Russell Editorial Project. See page 2 for details concerning a special session on Russel during the CSHPM/ SCHPM meeting to be held next May at McMaster.

number 1, November 1986
numéro 1, novembre 1986



Canadian Society for History and Philosophy of Mathematics

Société canadienne d'histoire et de philosophie des mathématiques

Raison d'être

The Bulletin had as its origin a discussion at the May 1986 meeting of the CSHPM/SCHPM held at the University of Manitoba. It was suggested that the organization expand the Newsletter that had been under the loving care of Louis Charboneau these many years. The Bulletin is not intended to perform functions which are being done elsewhere nor is the intention to turn it into another formal journal. Rather what seemed to be missing was an informal medium which could inform members, and others interested in the history and philosophy of mathematics, about current research work, happenings, forthcoming meetings etc. and also provide a place where one could present material and tidbits which do not find their place in the more formal media. We are thus interested in receiving the following:

i. Short (up to two single spaced pages) "surveys" of a field, work in progress etc. These will be printed as received.
ii. "news" i.e. announcements of work in progress, recent publications, announcement of meetings etc.
iii. quotations, anecdotes etc.
iv. a historical problem corner, i.e. problems based on material found in historical texts.

Material should be sent to:

Roger Herz-Fischler
Department of Mathematics and Statistics
Carleton University
Ottawa, Ontario, K1S-5B6
(or via the NetNorth computer mail network to ROGERH-F@CARLETON)

or

Marshall Walker
Department of Computer Science and Mathematics
Atkinson College, York University
North York, Ontario, M3J-2R7.

SPECIAL SESSION ON BERTRAND RUSSELL

As part of the annual meeting off the CSHPM/SCHPM at the Learned Societies meetings, which will take place at McMaster University in Hamilton, there will be a special session on Bertrand Russell. The tentative date is Sunday May 24, 1987. This session is particularly appropriate because McMaster is the home of the Russell Editorial Project. The session on Russell as well as all sessions of the society are open to all. Those scholars wishing to present a paper on Russell should contact:

Dr. Albert Lewis
Bertrand Russell Editorial Project
McMaster University TSH 719
Hamilton, Ontario
Canada, L8S 4M2

HISTORICAL PROBLEM SECTION/PROBLEMES HISTORIQUES

This section is similar to the problem sections found in journals such as Crux Mathematicorum - with one important difference: the problems must be based on a historical work. Full references should be supplied. Answers will be published in the same issue.

Problème 1. (Envoyé par Piero della Francesca ca. 1415 - 1492). Supposons que le côté d'un pentagone regulier est 4. Trouver la superficie en divisant le pentagone en QUATRE (pas 5!) triangles. Montrer que la réponse est R(400 + (128000)) où R(a) est la racine carée de a. Pour resoudre le problème on peut utiliser les équations quadratiques et les Eléments d'Euclide mais pas la trigonométrie d'aujourd'hui.

NOUVELLES/PERSONAL NOTES

Len Berggren (Simon Fraser) has received a 3-year SSHRC grant to edit and translate the complete works of the tenth century mathematician Abu Sahl al-Kuhi.

G. Cantor was unable to attend the annual meeting of the CSHPM/SCHPM due to an unfinished counting job.

Nobuo Miura is now teaching the history of science in Japan. His address is Shibuya Mansion 203, Kushihiki-cho 1-527-1, Oomiya, Saitama 330, Japan.

Craig Fraser (Toronto) was married in May. He spent the summer in Paris and Berlin doing archival research.

PUBLICATIONS

Berggren, Len. "The Origins of al-Birruni's 'Method of the Zijes' in the Theory of Sundials", Centaurus, 28(1965), 1-16.

Herz-Fischler, Roger & Curchin, Len. "De quand date le premier rapprochement entre la suite de Fibonacci et la division en extrême et moyenne raison?", Centaurus, 28(1985), 129-138.

Fraser, Craig. " D'Alembert's Principle: The Original Formulation and Application in Jean D'Alemberts Traité de Dynamique (1743)", Centaurus, 28(1985), 31-61, 145-159.

Mura, Nobuo. "The Applications of Trigonometry in Pitiscus: a Preliminary Essay", Historia Scientiarum, 30(1986), 63-78.

editor's note: 1985 appears to have been Canadian Year at Centaurus!

QUOTATIONS

"Good God! How Great and how rare an ornament is affability among theologians! And how thorougly desirable would it be in this age that all theologians be mathematicians, that is, that they be reasonable and gentle men." - B. Pitiscus, Trigonometriae Siue De dimensione Triangulorum..., Augsburg, 1600, p. iv (English translation: Trigonometry: or the Doctrine of Triangles, London, 1614); cited in Miura "Pitiscus" (see Publications)

"Though methinks I have neither wandered from the Purpose [ie. of this introductory lecture], nor or out of my Sphere, in thus exercising your Patience; since there can be no Introduction more suitable, or more profitable to the Mathematics than Patience itself; nor is any Person well qualified for these Disciplines, but he whose Ears have learned patiently to bear an insipid and empty Oration of less than two Hours long without Loathing or Weariness. I rightly named it an empty Oration, and therefore the more seasonable (for who can become eloquent or abound with Speech free from Blame with the Diet of Dumb Fishes?). But if I find it to have been very disagreeable to you, I shall easily comfort, yea congratulate myself with this strong Argument and certain Augury, that I have to Day performed the part of an accomplished Mathematician, i.e. a most wretched Orator." -Issac Barrow; the conclusion of the "Prefatory Oration", given March 14, 1664 in Issac Barrow, The Usefulness of Mathematical Learning Explained and Demonstrated: Being Mathematical Lectures Read in the Publick Schools at the University of Cambridge, London, Austen, 1734, p. xxxii [reprint: London, Frank Cass, 1970 ; Cass Library of Science Classics].

" Malgré la salutaire influence qu'elles exercent sur l'éducation sous le rapport intellectuel et moral, les mathématiques ne manquent pas de détracteurs: Leur étude, dit-on, quelquefois, transforme les hommes en machines à calculs, les rend maniaques, dur, égoïstes, étouffe dans leur âme la sensibilité, dessèche le coeur, tue l'imagination, éteint le sentiment du patriotisme, de la religion" - L. Zorn, Academie de Strasbourg/ Ecole professionelle de Mulhouse/ Discours sur les sciences mathématiques prononcé à la distribution des prix du 11 août 1868 par M. L. Zorn Professeur de mathématiques spéciales et sous-directeur de l'école, Mulhouse, L. Badeur, 1868. [Biblothèque Nationle, Paris, côte Vp 8237].

It is rare that the life and work of a mathematician becomes the subject of a film, play or book destined for a genral audience. There exists a movie about the life of Galois, but are there other examples that any readers can think of? The following review of a play dealing with the life and work of Alan Turing is taken from the Manchester Guardian Weekly of November 9, 1986.

The Turing test of freedom

THEATRE by Michael Billington

WE are used to modern plays that bombastically announce they are dealing with big issues. But the fascinating thing about Hugh Whitemore's Breaking The Code at the Haymarket is that it tackles major questions — such as the relationship between mathematics and personal morals — while telling a very good story. It is the work of a superb theatrical craftsman who knows how to keep an audience hooked while planting ideas like seeds.

Whitemore's hero, Alan Turing, was a mathematician and computer pioneer who broke the code in two ways. One was by cracking the German Enigma code at Bletchley Park during world war two. The other was by shattering the gentlemanly English code of sexual discretion and making little attempt to disguise his homosexuality. For the former he was lauded by Churchill and decorated by the state: for the latter he was in 1951, while a Reader in Mathematics at Manchester, arrested on a charge of gross indecency. Whitemore's play, shifting back and forth in time, constantly seeks to find a connection between the two events.

The easy way would be simply to see Turing as a victim of English Establishment hypocrisy. But at the heart of the play is Turing's excited discovery that in mathematics there is no inflexible rule for deciding what is right and wrong and that David Hilbert's axiomatic methods are flawed. If this is true for maths, then why not for morals? And so, at Bletchley and after, Turing sees no need to apologise for or conceal his sexual tastes.

Whitemore advances Turing's connection between science and morality less as a thesis than as a suggestion, but even so it leaves certain questions in the air. Such as whether Turing's open gayness didn't precede his questioning of mathematical axioms; and exactly why he blurted out to a Manchester cop, news of his affair with a local boy almost as if he wanted to be arrested.

But what makes it a good play is that it presents complex ideas in a highly theatrical form. Auden once said of Sherlock Holmes that he raised scientific curiosity to the status of an heroic passion. The same might be said of Whitemore's Turing (though due acknowledgment is given to Andrew Hodges's biography) who is obsessed by such questions as whether a machine can think, whether the mind can exist without the body and whether indeed God was a mathematician since in nature you find perfect forms.

Whitemore occasionally overlaps with other writers (notably David Hare whose Licking Hitler dealt with black propaganda at Bletchley). But what makes his play singular is that it conveys the sensory excitement of intellectual exploration.

It also creates one of the best, and most daunting, roles for an actor for some time. Not only is Turing never off stage. He also has to suggest by the merest gesture exactly which period of his life we are in. Derek Jacobi does all this — and more — with astonishing virtuosity. In a second he becomes the Sherborne schoolboy gazing at a friend with doe-eyed admiration; or the faintly arrogant Bletchley code-breaker with a Lawrentian sense of his own intellectual superiority; or the tentative middle-aged man breaking the news of his arrest to his mother; or the shy flirt who assumes the role of teacher to his lovers.

But what Jacobi brings out especially is the Peter Pan element in Turing's nature, with its yearning for a lost mother-love, combined with a bright-eyed excitement at the idea of a non-living brain. Jacobi conveys Turing's charm; but also his tragedy, which is that thought and feeling were never perfectly integrated.

Clifford Williams's production, set inside Liz de Costa's vast aircraft hangar filled with computerised machinery, has the great merit of pushing the story onwards so that the moral issues emerge almost obliquely. And the actors flesh out the attendant roles with particularly good work from Joanna David as a crypto-analyst devoted to Turing, from Michael Gough as his deeply English Bletchley boss advocating sexual restraint, and from Dave Hill as a dogged Manchester policeman.

One of the play's many ironies is that people are always telling Turing that they personally don't give a damn what his sexual preferences are. But, of course, they do. And one of the hidden themes in this fine and searching play — as in Pack Of Lies — is that when the morality of the state conflicts with that of the individual, it is the former that cruelly wins.

GANITA BHARITA

GANITA BHARITA (founded in 1979) is the quarterly Bulletin of the Indian Society for the History of Mathematics. It has now taken the form of an international journal which covers all periods, countries and aspects of the history of mathematics. Working under the guidance of an international editorial board, it welcomes research papers, articles, books for review, news items etc. The annual subscription rate for institutions is $US 50. The journal is sent free of charge to members of the Indian Society for the History of Mathematics (annual dues $US 25).

For editorial matters contact:

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Professor of Mathematics, B.I.T.
P.O. Mesra, RANCHI -835215, INDIA

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Dr. Man Mohan
Dept. of Mathematics
Ramjas College, Delhi University
DELHI - 110007, INDIA

JEAN VAN HEIJENOORT (1912-1986)

Historian of logic Jean van Heijenoort died unexpectedly in Mexico City on March 28, 1986 at the age of seventy three. He had been Professor Emeritus in the Department of Philosophy and History of Ideas at Brandeis University since 1977.

Van Heijenoort is best known as the editor of From Frege to Gödel: A Source Book in Mathematical Logic, 1879 - 1931 and as editor of Jacques Herbrand, Ecrits Logiques. At the time of his death he was serving as a coeditor of Kurt Gödel, Collected Works, volume 1 of which has just recently appeared. He was also looking forward to the appearance of a collection, which is to be published in the near future, of his own writings in the history and philosophy of logic.

In addition to his work in the history and philosophy of logic, van Heijenoort had a number of important results in general logic and proof theory which were not published, but were circulated among his colleagues and students in the form of photocopies. Among these were his proof of the soundness and completeness of the falsifiability tree method for propositional calculus (1973), for quantification theory, i.e. first-order functional calculus (1972), and for the simple theory of types with extensionality (1972).

Irving H. Anellis

ANNUAL BUSINESS MEETING / ASSEMBLEE GENERALE
Winnipeg, Manitoba
May 27 mai 1986

MINUTES / PROCES-VERBAL

Présents:
Arthur Miller, Mount Allison Univ.
V.J. Katz, Univ. of the district of Columbia
J. de Koning, University of Toronto
Len Berggren, Simon Fraser University
John Berry, University of Manitoba
Ross Willard, University of Waterloo
Edward Barbeau, University of Toronto
L. Charbonneau, Univeristé du Québec à Montréal
W. Stevens, University of Winnipeg.
I. Kleiner, York University
Roger Herz-Fishler, Carleton University
M.A. Malik, Concordia University
Robert Thomas, University of Manitoba
Marshall Walker, York University

Ed Barbeau, Président de la société, préside l'assemblée. L. Charbonneau, secrétaire-trésorier, en est le secrétaire.

1. Procès-verbal de l'assemblée générale de 1985.

   La liste des personnes présentes est revisée.
   Proposé par Ed. Barbeau et secondé par M.A. Malik;

   Il est proposé que le procès-verbal de l'assemblée générale 1985, tel que corrigé en assemblée, soit accepté.

   Approuvé à l'unanimité.

2. Scrutateur

   M.A. Malik est nommé scrutateur pour le dépouillement des bulletins de vote pour l'élection des membres du conseil d'administration.

3. Rapport du président sortant: Marshall Walker, York University.

   Le président résume le contenu de la réunion du conseil d'administration qui s'est tenue ce matin. Il soulève entre autres la question du Newsletter qui ne remplit pas actuellement ses fonctions. Il souligne aussi l'intérêt de tenir éventuellement des sessions conjointes avec d'autres sociétés. Cette remarque provoque une discussion sur

/... 2

les prochains congrès. Il en ressort que le congrès se tenant à McMaster University l'an prochain, il serait souhaitable qu'il y ait une activité centrée sur Russell. Cette activité pourrait se tenir conjointement avec l'Association de Philosophie du Canada et/ou la Russell Society. A.C. Lewis et Greg Moore devrait être impliqués dans l'organisation de cette activité. Il apparaît par ailleurs important à plusieurs membres que la Société entretienne des contacts plus étroits avec l'Association mathématique du Canada et le Groupe canadien d'étude en didactique des mathématiques.

Toutes ces remarques seront prise en considération par le comité du programme du prochain congrès.

2. Rapport financier: Louis Charbonneau, U.Q.A.M.

Par inadvertance, le rapport a été oublié à Montréal, il n'a donc pas puê tre approuvé par l'assemblée. (Une copie est néanmoins jointe au présent procès-verbal).

Le secrétaire-trésorier remarque que les finances de la société sont plus précaires qu'auparavant étant donné les dépenses encourues par le Congrès 1985. Il souligne aussi que notre appartenance à CFH/FCEH nous coûte $5.00 par membre par années. Par ailleurs nous obtenons une subvention administrative d'environ $700 par année du CNRSH/SSHRC ce qui permet de distribuer la subvention de voyage entièrement aux membres, autres que de l'exécutif, qui participent au congrès.

Afin d'assainir les finances de la Société, Louis Cahrbonneau, secondé par Len Berggren, propose de porter la cotisation annuelle de la Société à $15.00, tout en ne changeant la cotisation des membres étudiants.

Une vive discussion suit au cours de laquelle les questions du Newsletter et du budget du congrès annuel sont débatues.

Ed Barbeau propose de reporter la discussion sur la cotisation après la discussion sur le Newsletter.

Adopté à l'unanimité.

La discussion continue sur les frais relatifs au congrès annuel. Il est décidé de limiter les frais du congrès à $600 par année. Par ailleurs, l'exécutif présentera un budget global d'ici peu.

4. Lobby auprès du CRSNG.

Len Berggren signale que le CRSNG ne subventionnera plus les projets de recherches en histoire des mathématiques. Prenant en considération que le type de projet subventionné par le CRSH ne correspond pas toujours aux modes de fonctionnement des recherches en histoie des mahtématiques, il serait important de connaître pourquoi le CRSNG a pris cette décision et de tenter de l'amener à changer sa décision. Il faudrait donc entrer en contact avec le CRSNG. Nous pourrions pour ce faire nous associer avec SMC et impliquer aussi PRISMA.

Après discussion, il est donc proposé, par Len Berggren, secondé par I. Kleiner,

que la Société demande au CRSNG et au CRSH de clarifier leur position respective en regard du financement de la recherche en histoire des mathématiques. Il serait souhaitable que la SMC soit impliquée dans cette démarche.
CRSH.

/... 3

5. Newsletter

Suite aux discussions qui ont suivies la présentation du rapport financier, le problème du Newsletter est repris.

Suite à cette discussion, il est proposé par Malik, secondé par J. de Koning, que

Un comité soit formé qui aura pour but de revivifier le Newsletter. L'exécutif est mandaté pour déterminer la composition de ce comité.

Adopté à l'unanimité.

Il est suggéré par quelques membres que ce comité pourraitê tre composé de trois membres nommés pour trois ans, un nouveau membre étant nommé chaque année de façon à assurer une certaine permanence.

6. Cotisation annuelle

Suite aux diverses discussions relatives au finances de la Société, il est proposé par Malik, secondé par I. Kleiner, que

La cotisation annuelle des membres réguliers de la Société pour 1987 soit portée à 15 $. Pour les membres étudiants, la cotisation restera à 5 $. Par ailleurs, l'exécutif pourra après étude plus appronfondie des finance de la Société décider d'augmenter le montant de la cotisation pour 1987.

Adopté à l'unanimité.

7. Rapport du scrutateur

Les résultats du vote sont dévoilés par le scrutateur: sur 18 bulletins:
M. Walker : 16 pour, 0 contre
Président
L. Breggren : 18 pour, 0 contre
Vice-Président
L. Charbonneau : 18 pour : 0 contre
Secrétaire-trésorier
R. Herz-Fishler : 16 pour, 0 contre
Membre du conseil
C. Fraser : 17 pour, 0 contre
Membre du conseil

8. Remerciements

L'ensemble des membres présents se joignent à Ed. Barbeau pour remercier Ross Willard pour son excellent travail en tant que président du programme du congrès de cette année.

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

SECRETARY-TREASURER'S REPORT
RAPPORT DU SECRETAIRE-TRESORIER

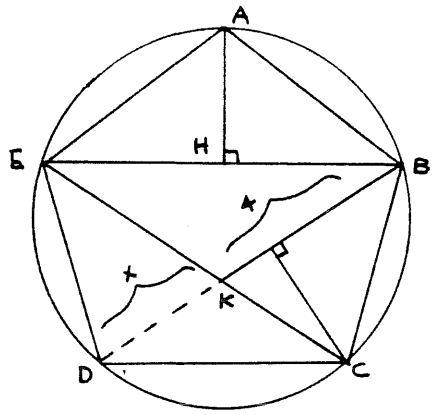
31 dec. 1985

Crédit / Credit		
COTISATION	502.03	
ABONNEMENT H.M.	604.89	
INTERETS	24.80	
SUBVENTION-VOYAGE (CNRSH)	891.00	
SUBVENTION ADMINISTRATIVE (CNRSH)	773.00	
Débit / Debit		
PHOTOCOPIE		134.47
POSTE		71.64
TELEPHONE		61.43
CONGRES ANNUEL		1500.98
SUBVENTION-VOYAGE CNRSH		895.00
ACADEMIC PRESS (H.M.)		1453.18
SERVICE BANCAIRE		7.84
VOYAGES EXEC.		540.00
PRISMA		45.50
TOTAL	2795.72	4710.04
SOLDE DE L'ANNEE	-1914.32	
SOLDE 1984	3297.46	
SOLDE TOTAL	1383.14	

COMPTE D'EPARGNE (BCIC/CIBC, Succ. £21, £ 9510869)	525.49
COMPTE DE CHEQUES (BCIC/CIBC, Succ. £21, £ 81-03712)	857.65
TOTAL	1383.14

ANSWERS

Problème 1. (source Trattato d'abaco [G. Arrighi rédacteur], Pisa, Domus Galilaenama, 1970, p. 190). Les triangles sont ABE = EBK = ECD et KBC.



L'altitude est la même pour tous les triangles. Pour trouver AH trouvons d'abord la diagonale DB = EC = EB . Par Euclid XIII,8 les diagonales se coupent en moyenne et extrême raison - voir VI, def. 3 - et la plus grande partie est le côté = 4. Donc si DB = x + 4 alors $x(x+4) = 4^2$ ce qui nous donne EH = DB = R(20) + 2 . Par le théorème de Pythagore AH = $R(4^2 - HB^2)$ = R(10 - R(20)) . La superficie du pentagone est donc 3[AH· EB]/2 + [AH· 4]/2 = R(400 + R(128000)).

CALL FOR PAPERS - MCMASTER MEETING
APPEL - REUNION ANNUELE

Messieurs et Mesdames les savants désireux de donner une conférence à la réunion annuelle qui aura lieu à l'université McMaster en Mai 1987 sont priés d'envoyer un compte-rendu au coordonnateur de la réunion:

Professeur Tom Archibald
Department of Mathematics
Acadia University
Wolfville, Nouvelle Ecosse, B0P-1X0

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:

Professeur Louis Charboneau
Département de mathématiques et d'informatique
Université du Québec à Montréal
C.P. 8888, Succ. A
Montréal, Québec, H3C-3P8

THE BERTRAND RUSSELL EDITORIAL PROJECT

by
Albert Lewis, Director

The Project has produced 4 volumes towards the projected 28-volume McMaster University edition of The Collected Papers of Bertrand Russell. There are two series, one of which is devoted primarily to philosophy and logic and the other to non-philosophical topics. The philosophy series, in addition to printing definitive versions of previously published papers and reviews, will be the first publication for hundreds of pages of manuscripts from the Russell Archives at McMaster. It will include early drafts of The Principles of Mathematics (1903), reflecting changes made as Russell came to appreciate the value of Peano's school and of Georg Cantor's work and discovered the paradox which bears his name. The series will also include preliminary versions and drafts of what was originally intended to be the second volume of The Principles of Mathematics and then became Principia Mathematica.

Volume 1, the first published, ranges from 1888 to 1899 and belongs to both series since it contains Russell's diaries, presentations at meetings of the Apostles, graduate essays in philosophy, economic writings, and works on geometry relating to his dissertation which was published as An Essay on the Foundations of Geometry (1897).

The forthcoming volumes most relevant to mathematics and logic are edited by Nicholas Griffin of McMaster (Volume 2, 1896-1899), Gregory H. Moore of McMaster (Volumes 3, 1900-1902, and 5, 1906-1908), and Alasdair Urquhart of Toronto (Volume 4, 1903-1905). Albert C. Lewis assists with all of these volumes as a research associate at McMaster.