



Abstracts

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Books for abstracting and eventual review should be sent to this department. Materials should be sent to Duncan J. Melville, Department of Mathematics, Computer Science and Statistics, St. Lawrence University, Canton, NY 13617, USA (e-mail: dmelville@stlawu.edu).

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In order to facilitate reference and indexing, entries are given abstract numbers which appear at the end following the symbol #. A triple numbering system is used: the first number indicates the volume, the second the issue number, and the third the sequential number within that issue. For example, the abstracts for Volume 30, Number 1, are numbered: 30.1.1, 30.1.2, 30.1.3, etc.

For reviews and abstracts published in Volumes 1 through 13 there is an *author index* in Volume 13, Number 4, and a *subject index* in Volume 14, Number 1. An online index of all abstracts that have appeared in *Historia Mathematica* since 1974 is now available at <http://historiamathematicaabstracts.questu.ca/>.

The initials in parentheses at the end of an entry indicate the abstractor. In this issue there are abstracts by Francine Abeles (Union, NJ), Joe Albree (Montgomery, AL), Larry D'Antonio (Mahwah, NJ), Jan P. Hogendijk (Utrecht), Calvin Jongsma (Sioux Center, IA), Laura Martini, Kim Plofker, and Duncan J. Melville.

General

Bartosiewicz, Zbigniew. The brachistochrone problem and control theory [in Polish], in #36.4.22, pp. 11–14. #36.4.1

Bell, John L. *The Continuous and the Infinitesimal in Mathematics and Philosophy*, Monza: Polimetria, 2006, 352 pp. The author gives a “very condensed” and “highly

informative” historical survey of the continuous and the infinitesimal from the presocratics of ancient Greece to the early 20th century. To describe the development of these concepts in the second half of the 20th century, the author introduces results in topological spaces, manifolds, and further contemporary mathematics. See the review by Karl-Heinz Schlote in *Zentralblatt MATH* 1157.01001. (JA) #36.4.2

Brown, Gerald E.; and Lee, Chang-Hwan, eds. *Hans Bethe and his Physics*, Hackensack, NJ: World Scientific Publishing Co. Pte. Ltd., 2006, xiv+314 pp. This volume presents and discusses Hans Bethe and his physics through almost eight decades of original research, scientific papers, books, and reports spanning the key areas of 20th-century physics. It is divided into four parts which consist of papers and articles written in appreciation of Bethe’s work, Bethe’s research activity in physics and astrophysics, and his discovery of the CN cycle which would earn Bethe the Nobel Prize in 1967. (LM) #36.4.3

Dehaene, Stanislas; Izard, Véronique; Spelke, Elizabeth; and Pica, Pierre. Log or linear? Distinct intuitions of the number scale in Western and Amazonian indigene cultures. *Science* **320** (5880) (2008), 1217–1220. Compares number-space mapping behavior in Western children and literate adults and in members of an Amazonian indigene group called the Mundurucu. The authors conclude that the universal human intuition of the mapping of numbers onto space is logarithmic, and that the concept of linear scale mapping “appears to be a cultural invention that fails to develop in the absence of formal education”, even among adults. (KP) #36.4.4

Francaviglia, Mauro; and Palese, Marcella. Il ruolo della geometria non euclidea nello sviluppo delle teorie relativistiche della gravitazione [The role of non-Euclidean geometry in the development of relativistic gravity theory], in #36.4.70, pp. 195–210. A review of the concept of space from Euclidean geometry to fields and connections, and its importance in the evolution of physics. See the review by Matteo Luca Ruggiero in *Mathematical Reviews* 2374677 (2009b:83100). (DJM) #36.4.5

Głazunow, Jurij. The origin of the calculus of variations and its influence on the development of applied mathematics [in Polish], in #36.4.22, pp. 63–73. #36.4.6

Grant, Hardy. What’s in a word? Symmetry through the centuries. *Historia Mathematica* **36** (2) (2009), 171–177. An essay review of Hon, Giora; and Goldstein, Bernard R., *From Summetria to Symmetry: The Making of a Revolutionary Scientific Concept*. The author takes issue with Hon and Goldstein’s interpretation of a passage from Legendre as giving a definition of “symmetry”, and whether it offers a definitive break from the past. Grant calls the book “flawed but fascinating” in its attempt to understand the history of concepts and terminology of symmetry. (DJM) #36.4.7

Green, Judy; and LaDuke, Jeanne. *Pioneering Women in American Mathematics. The pre-1940 PhD’s (History of Mathematics 34)*, Providence, RI: American Mathematical Society; London: London Mathematical Society, 2009, xviii+349 pp. The first half of the book provides general information on the roles, professions and status of women in mathematics from the 19th and early 20th centuries; the second half gives short biographies of all women who obtained a mathematics PhD in America before 1940. See the review by Charles Ashbacher in *MAA Reviews*, <http://www.maa.org/maareviews/2191.html>. (DJM) #36.4.8

Hartshorne, Robin; and van Luijk, Ronald. Non-Euclidean Pythagorean triples, a problem of Euler, and rational points on K3 surfaces. *Mathematical Intelligencer* **30** (4) (2008),

4–10. A detailed analysis of the linkage between two equivalent problems: finding Pythagorean triples in hyperbolic geometry and Euler’s problem of finding three squares of integers where the difference of the squares of any two is a square. The authors reinterpret Euler’s problem first to find rational points on an algebraic surface, and then rational points on K3 surfaces whose set of rational points are not contained in any proper algebraic subvariety, proving an important theorem. (FA) #36.4.9

Izard, Véronique. *See* #36.4.4.

LaDuke, Jeanne. *See* #36.4.8.

Larvor, Brendan. What can the philosophy of mathematics learn from the history of mathematics? *Erkenntnis* **68** (3) (2008), 393–407. Surveys various aspects of philosophy of mathematics connecting it with a historical perspective, concluding that “the philosophy of mathematics is unavoidably historical, but need not and must not merge with historiography”. (KP) #36.4.10

Lee, Chang-Hwan. *See* #36.4.3.

van Luijk, Ronald. *See* #36.4.9.

Monjardet, Bernard. “Mathématique sociale” and mathematics. A case study: Condorcet’s effect and medians. *Journal Électronique d’Histoire des Probabilités et de la Statistique* **4** (1) (2008), 26 pp. The author interprets Condorcet’s approach to dealing with cyclic collective preferences as a “search for a median in a certain metric space”, and uses the many cases where such a notion of metric median has appeared as illustrating his contention that “social mathematics” is mathematics. (DJM) #36.4.11

Palese, Marcella. *See* #36.4.5.

Peckhaus, Volker, ed. *Oskar Becker und die Philosophie der Mathematik* [*Oskar Becker and the Philosophy of Mathematics*]. Lectures from the Becker Colloquium held at Fernuniversität Hagen, Hagen, 2001–2003, Paderborn: Wilhelm Fink Verlag, 2005, 352 pp. A collection of papers based on talks at the Becker Colloquia of 2001, 2002 and 2003. The papers, all on Becker’s contributions to the history and philosophy of mathematics, are abstracted separately as: #36.4.13; #36.4.14; #36.4.15; #36.4.20; #36.4.47; #36.4.100; #36.4.115; #36.4.119; #36.4.130; #36.4.131; #36.4.142; #36.4.151; #36.4.156; #36.4.157; and #36.4.160. *See* the reviews by Victor V. Pambuccian in *Zentralblatt MATH* 1158.03003; and by Gerhard Heinzmann in *Historia Mathematica* **36** (2) (2009), 189–191. (DJM) #36.4.12

Peckhaus, Volker. Einleitung: Oskar Becker und die Philosophie der Mathematik [Introduction: Oskar Becker and the philosophy of mathematics], in #36.4.12, pp. 9–14. #36.4.13

Peckhaus, Volker. Impliziert Widerspruchsfreiheit Existenz? Oskar Beckers Kritik am formalistischen Existenzbegriff [Does compatibility imply existence? Oskar Becker’s formalistic critique of the notion of existence], in #36.4.12, pp. 79–99. #36.4.14

Pica, Pierre. *See* #36.4.4.

Poser, Hans. Ontologie der Mathematik im Anschluß an Oskar Becker [Ontology of mathematics following Oskar Becker], in #36.4.12, pp. 59–77. #36.4.15

Purkert, Walter. The Double Life of Felix Hausdorff/Paul Mongré. Translated by Hilde Rowe and David E. Rowe. *Mathematical Intelligencer* **30** (4) (2008), 36–50. The story of the

life and tragic death of the German mathematician Felix Hausdorff (1868–1942), his mathematical work, and the literary work he published under his pseudonym, Paul Mongré. The author is one of the main editors of the Hausdorff edition of a projected nine volumes of which Springer Verlag has already published five. Six photographic images and an extensive bibliography are included. (FA) #36.4.16

Schubring, Gert. *Análise Histórica de Livros de Matemática. Notas de Aula* [*Historical Analysis of Mathematical Textbooks. Lecture Notes*], Campinas, SP, 2003, 175 pp. Gives an analytic overview of the history of mathematical textbooks, with an emphasis on the 18th and early 19th centuries. The work is based on lecture notes of a course taught by the author. See the review by Henrique Leitão in *Historia Mathematica* 36 (2) (2009), 178–179. (DJM) #36.4.17

Spelke, Elizabeth. See #36.4.4

Swetz, Frank J. *Legacy of the Luoshu. The 4000 Year Search for the Meaning of the Magic Square of Order Three*, Wellesley, MA: A.K. Peters, 2008. xiv+214 pp. The author examines the history and cultural significance of the *luoshu*, a 3×3 magic square, found in ancient Chinese texts. The author also examines the subsequent appearance of magic squares in India, Japan, the Middle East, and eventually Europe. The final chapter considers the aesthetics of magic squares. See the review by E.J. Barbeau in *Mathematical Reviews* 2433106 (2009d:01004). (LD) #36.4.18

Tatarkiewicz, Krzysztof. A famous work, but is it deservedly so? [in Polish], in #36.4.22, pp. 159–180. #36.4.19

Thiel, Christian. Becker und die Zeuthensche These zum Existenzbegriff in der antiken Mathematik [Becker and Zeuthen's thesis on the notion of existence in ancient mathematics], in #36.4.12, pp. 35–45. #36.4.20

Wagner, Roy. Post-structural readings of a logico-mathematical text. *Perspectives on Science. Historical, Philosophical, Social* 16 (2) (2008), 196–230. The author considers the texts of Gödel's first incompleteness theorem from the perspective of post-structural semiotic theories. (DJM) #36.4.21

Więśław, Witold, ed. *Famous Mathematical Works and Anniversaries* [in Polish]. Papers from the 18th All-Polish School on the History of Mathematics held in Białystok, May 31–June 4, 2004, Białystok: Użytkowej w Białymstoku, Wyższa szkoła Matematyki i Informatyki, 2005, 202 pp. The articles from this conference proceedings, all in Polish, are listed separately as #36.4.1; #36.4.6; #36.4.19; #36.4.23; #36.4.38; #36.4.55; #36.4.83; #36.4.86; #36.4.108; #36.4.111; #36.4.112; #36.4.114; #36.4.120; #36.4.136, and #36.4.159. (DJM) #36.4.22

Więśław, Witold. Franciscus Vieta—What is left after him? [in Polish], in #36.4.22, pp. 189–202. #36.4.23

Mesopotamia

Damerow, Peter. Socrates in Babylon. *Revista Brasileira de História da Matemática* (Special Issue) 1 (2007), 477–491. Examines the epistemological question of whether the sort of deductive arguments commonly associated with classical Greek mathematics could have been present in the mathematics of the Old Babylonian period. (KP) #36.4.24

Higgins, J.R. Linear interpolation and a clay tablet of the Old Babylonian period. *Sampling Theory in Signal and Image Processing* 6 (3) (2007), 243–247. The author summarizes the analyses of Neugebauer and Thureau-Dangin on an example of linear interpolation in a compound interest problem on the Old Babylonian tablet AO 6770. The author’s aim is to present this work to a new audience. (DJM) #36.4.25

India

Dvivedi, Kapil Deva; and Singh, Shyam Lal. *The Prosody of Piṅgala. A Treatise of Vedic and Sanskrit Metrics with Applications of Vedic Mathematics*, Varanasi: Vishwavidyalaya Prakashan, 2008, xxiv+315 pp. A translation of the Sanskrit *Chandaḥ-sūtra*. (Prosody Rules) of Piṅgala, usually dated to the mid- to late-first millennium BCE (although either the translators or the reviewer assigns him to the early third millennium), accompanied by an analysis of the work’s combinatorial content, and the first English translation of parts of the 10th-century CE commentary by Halāyudha. See the review by Hansraj Joshi in *Mathematical Reviews* 2393967 (2009d:01009). (KP) #36.4.26

Iyengar, R.N. Archaic astronomy of Parāśara and Vṛddha Garga. *Indian Journal of History of Science* 43 (1) (2008), 1–27. Discusses the Indian tradition of astral omens involving comets associated with the historically obscure authors Parāśara and Garga prior to the mid-first millennium CE, and presents astrochronological arguments for assigning the start of this tradition to the second or third millennium BCE. (KP) #36.4.27

Singh, Shyam Lal. See #36.4.26.

China

Han, Qi; and Siu, Man-Keung. On the myth of an ancient Chinese theorem about primality. *Taiwanese Journal of Mathematics* 12 (4) (2008), 941–949. Investigates the so-called “Chinese Hypothesis” that Chinese scholars in the first millennium BCE conjectured that an integer n is a prime if and only if $2^{n-1} - 1$ is divisible by n , and examines the possible origins of this story in the 19th-century number theory explorations of Li Shanlan. (KP) #36.4.28

Siu, Man-Keung. See #36.4.28.

Islamic/Islamicate

De Young, Gregg. Book XVI: A medieval Arabic addendum to Euclid’s *Elements*. *SCIAMVS* 9 (2008), 133–209. This paper contains a copy, and an English translation, of a 16th century manuscript of Book XVI from the Hyderabad Oriental Manuscripts Library and Research Center. Featured are constructions of various non-regular polyhedra, and thus the contents are “more in the Archimedean tradition than that of Euclid.” See the review by Benno van Dalen in *Zentralblatt MATH* 1156.01003. (JA) #36.4.29

Qāzī Zādeh Rūmī, Muhammad ibn Mūsā. *Risālah fī Istikhrāj Jayb Darajah Wāhidah*, edited by Fateme Savadi. Tehran: Mīras-i Maktūb, 2009, 106 pp. This booklet contains an edition of the Arabic text and a translation into modern Persian of the treatise by Qāzī

Zādeh Rūmī (ca. 1365–1437) on the numerical determination of $\sin 1^\circ$ (in 10 sexagesimal digits) by means of a cubic equation. The treatise is sometimes attributed to Ulūgh Beg (1394–1449), ruler of Samarkand. In her commentary, Fateme Savadi compares Rūmī’s solution with the somewhat similar solution of the same problem by Rūmī’s contemporary Jamshīd Kāshī. The book includes a facsimile of two Arabic manuscripts of Rūmī’s treatise: Tehran, Melli Malek 3180/11, written in Samarqand in 1433, and Meshed, Astan-e Qods Reżawī 12235/6, with some additional tables. (JPH) #36.4.30

Savadi, Fateme. See #36.4.30.

Other non-Western

Chemillier, M. Éléments pour une ethnomathématique de l’awélé [Aspects of the ethnomathematics of the game awele]. *Mathématiques et Sciences Humaines. Mathematics and Social Sciences* 181 (2008), 5–33. This paper compares some mathematical properties of awele, a game played in Africa, and some explanations given by its players in light of ethnomathematics, a new domain focusing on activities of traditional societies based on mathematical concepts. (LM) #36.4.31

Gerdes, Paulus. From the African *sona* tradition to new types of designs and matrices, in Konaté, Dialla, ed., *Mathematical Modeling, Simulation, Visualization and E-learning*, Berlin: Springer, 2008, 323–342. The author describes *sona* sand-drawings from Western Africa and considers some geometry inspired by these drawings, especially cycle matrices. He generalizes these constructions towards results having no direct connection with *sona* drawings. See the review by Victor J. Katz in *Mathematical Reviews* 2441590 (2009g:01002). (DJM) #36.4.32

Houkonnou, M. Norbert. Mathematics from Africa: Status, goals, and responsibilities, in Sica, Giandomenico, ed., *What Mathematics from Africa? (Advanced Studies in Mathematics and Logic 2)*, Monza: Polimetrica, 2005, pp. 25–33. The author discusses mathematics in Africa as a science depending on established political, economical, social, and ideological structures. He also analyzes the role Africa played in the development of world mathematics. (LM) #36.4.33

Antiquity

Euclide. *Tutte le opere [Complete Works]*. Edited and translated, with introduction and notes by Fabio Acerbi. With facing original Greek text (in Italian and Greek), Milano: Bompiani, 2007, 2713 pp. The preface (almost 800 pages), which is based on linguistic analysis as opposed to mathematical content, is an exposition of the place of Euclid’s *Elements* in the whole of ancient Greek science. This “precise” translation even includes those books of the *Elements* usually considered dubious. See the review by L. Borzacchini in *Zentralblatt MATH* 1154.01021. (JA) #36.4.34

Grant, Hardy. Who’s Hypatia? Whose Hypatia do you mean? *Math Horizons* April (2009), 11–15. A tour through what is known and what is not known about Hypatia’s life and work, and a guide to who has been appropriating her for their own ends. (DJM) #36.4.35

Janeczko, Stanisław. See #36.4.36.

Joets, Alain. Caustics in Greek antiquity, in Janeczko, Stanisław, et al., eds., *Geometry and Topology of Caustics—Caustics'06. Proceedings of the 3rd Banach Center symposium, Warsaw, Poland, June 19–30, 2006 (Banach Center Publications 82)* (Warsaw: Polish Academy of Sciences, Institute of Mathematics, 2008), pp. 157–161. Discusses the relation of the curves defined by the envelope of light rays reflected by a given curve, which were called “caustic curves” by the 17th-century scientist Tschirnhausen, to the optical phenomenon obscurely named “achilles” in a couple of Hellenistic Greek sources. See the review by Karl-Bernhard Gundlach in *Zentralblatt MATH* 1155.01001. (KP) #36.4.36

Lemmermeyer, Franz. Zur Zahlentheorie der Griechen. I. Euklids Fundamentalsatz der Arithmetik [Number theory of the Greeks. I. Euclid’s fundamental theorem of arithmetic]. *Mathematische Semesterberichte* 55 (2) (2008), 181–195. The author’s summary states that “we present Euclid’s fundamental theorem of number theory and provide evidence for the assertion that this theorem, which today is largely unknown, was as familiar to number theorists before Gauss as the Gaussian version of the fundamental theorem is to us.” (KP) #36.4.37

Maruszczyk, Kazimierz. Mathematics in Plato’s *Dialogues* [in Polish], in #36.4.22, pp. 125–135. #36.4.38

Panza, Marco. What is new and what is old in Viète’s *analysis restituta* and *algebra nova*, and where do they come from? Some reflections on the relations between algebra and analysis before Viète. *Revue d’Histoire des Mathématiques* 13 (1) (2007), 85–153. The author addresses the question on how we should understand the term “algebra” in the context of the title of Viète’s *Opus* and suggests distinguishing between the kind of problematic analysis described by Pappus at the beginning of the 7th book of his *Mathematical collection* and the one applied by Viète. (LM) #36.4.39

See also: #36.4.20; #36.4.24; and #36.4.110.

Middle Ages

Netz, Reviel. A programmatic note: On two types of intertextuality. *Revue d’Histoire des Mathématiques* 11 (1) (2005), 143–155. This paper addresses some reactions to a previous article (Netz, Reviel. Deuteronomic texts: Late antiquity and the history of mathematics. *Revue d’Histoire des Mathématiques* 4 (2) (1998), 261–288. See the review in *Zentralblatt MATH* 0967.01003) and discusses questions concerning modes of intertextuality. (LM) #36.4.40

Renaissance

Adler, Jeffrey D.; Fuoss, Ryan W.; Levin, Michael J.; and Youell, Amanda R. Reading encrypted diplomatic correspondence: An undergraduate research project. *Cryptologia* 32 (1) (2008), 1–12. Describes an undergraduate research project in which encrypted 16th-century Spanish diplomatic correspondence was deciphered by students unfamiliar with Spanish. (KP) #36.4.41

Buonafalce, Augusto. Cicco Simonetta's cipher-breaking rules. *Cryptologia* **32** (1) (2008), 62–70. Investigates the 15th-century work on cipher-cracking by the Italian statesman Simonetta and compares it to contemporary examples of ciphers, concluding that Simonetta's techniques were actually rather old-fashioned and ineffective by the standards of his day. (KP) #36.4.42

Docampo Rey, Javier. Algebraic diagrams in an early 16th-century Catalan manuscript and their possible sources. *Historia Mathematica* **36** (2) (2009), 113–136. The author considers certain diagrams of coefficients as aids to performing algebraic operations that appear in a Catalan manuscript of algebra and arithmetic from around 1520. He considers a variety of possible sources for these diagrams, concluding that the picture is murky. It seems to him that the diagrams ultimately derive from al-Karajī's tradition, but the details of the transmission are obscure. (DJM) #36.4.43

Duvernoy, Sylvie. Leonardo and theoretical mathematics. *Nexus Network Journal* **10** (1) (2008), 39–49. This paper discusses Leonardo's mathematical notes and his approach to the two classical geometric problems of the duplication of the cube and the quadrature of the circle. It also focuses on Leonardo's attempt to rise from planar to three-dimension geometry. (LM) #36.4.44

Ekert, Artur. Complex and unpredictable Cardano. *International Journal of Theoretical Physics* **47** (2008) (8), 2101–2119. The author looks at Girolamo Cardano and the birth of probability and complex numbers, important ingredients in quantum physics. (DJM) #36.4.45

Fletcher, Rachel. Dynamic root rectangles. II. The root-two rectangle and design applications. *Nexus Network Journal* **10** (1) (2008), 149–178. This is the second in a series of articles treating “dynamic symmetry”, the name given by the early 20th-century artist Jay Hambidge to the concept of repeated spatial division using rectangles with long and short sides in the same incommensurable ratio, such as $\sqrt{2} : 1$, $\sqrt{3} : 1$, and so on. The author examines various geometric constructions involving rectangles with $\sqrt{2} : 1$ proportions and their application to design practices. It remains unclear to this abstractor why this paper is classified as having a significant connection to the history of mathematics in the Renaissance. (KP) #36.4.46

Fuoss, Ryan W. See #36.4.41.

Knobloch, Eberhard. Archimedes, Kepler und Guldin—zur Rolle von Beweis und Analogie [Archimedes, Kepler and Guldin—on the role of proof and analogy], in #36.4.12, pp. 15–34. #36.4.47

Levin, Michael J. See #36.4.41.

Reynolds, Mark. The octagon in Leonardo's drawings. *Nexus Network Journal* **10** (1) (2008), 51–76. The author presents a study on Leonardo's use of the octagon in his drawings and architectural renderings, focusing on Leonardo's applications of the octagon. (LM) #36.4.48

Roelofs, Rinus. Two- and three-dimensional constructions based on Leonardo grids. *Nexus Network Journal* **10** (1) (2008), 17–26. The author discusses Leonardo's drawings in 899v in his Codex Atlanticus and compares them with his own constructions and structures. (LM) #36.4.49

Xavier, João Pedro. Leonardo's representational technique for centrally-planned temples. *Nexus Network Journal* **10** (1) (2008), 77–99. This paper investigates the originality of Leonardo's technique of representation which combines the building plan and a bird's-eye perspective of the whole into a single system. It also examines the special relationship with his research on centrally-planned churches in the context of contemporary developments and architects. (LM) #36.4.50

Youell, Amanda R. See #36.4.41.

17th century

Antognazza, Maria Rosa. *Leibniz: An Intellectual Biography*, Cambridge: Cambridge University Press, 2009. xxviii+623 pp. This is a biography emphasizing the intellectual life of Leibniz. The book is organized chronologically into nine chapters, each of which considers a period of Leibniz's life and the impact on his work. See the review by Eberhard Knobloch in *Mathematical Reviews* 2446405 (2009f:01011). (LD) #36.4.51

Buchwald, Jed Z. Descartes's experimental journey past the prism and through the invisible world to the rainbow. *Annals of Science* **65** (1) (2008), 1–46. This paper presents a reproduction of Descartes's experiments, with attention to the rhetorical structure of Descartes's presentation, on his model for the invisible world and discusses Descartes's results. (LM) #36.4.52

Khrushchev, Sergey. Orthogonal polynomials: The first minutes, in Gesztesy, F., et al., eds., *Spectral Theory and Mathematical Physics: A Festschrift in Honor of Barry Simon's 60th Birthday (Proceedings of Symposia in Pure Mathematics 76, Part 2)*, Providence, RI: American Mathematical Society, 2007, pp. 875–905. Discusses themes related to continued fractions and orthogonal polynomials, starting with Brounkner's work in the 17th century and touching on work by Euler, Gauss, Jacobi, and others. Excellent treatment of developments covering a period of over 300 years. See the review by M.E. Muldoon in *Mathematical Reviews* 2310216 (2008k:33001). (CJ) #36.4.53

Leibniz, Gottfried Wilhelm. *Sämtliche Schriften und Briefe. Reihe 7. Mathematische Schriften. Band 5. 1674–1676. Infinitesimalmathematik [Collected Works and Letters. Series 7. Mathematical Writings. Vol. 5. 1674–1676. Infinitesimal Mathematics]*. Uwe Mayer, Siegmund Probst, and Heike Sefrin-Weis, eds., Berlin: Akademie Verlag, 2008, 664 pp. This book contains unpublished manuscripts, in Latin with German translations, emphasizing Leibniz's work on calculus and transcendental curves. Leibniz was in Paris when he composed most of these items. See the review by Thomas Sonar in *Zentralblatt MATH* 1155.01006. (JA) #36.4.54

Maligranda, Lech. Guillaume François Antoine de l'Hospital (1661–1704) (on the tercentenary of his death) [in Polish], in #36.4.22, pp. 81–123. #36.4.55

Mayer, Uwe. See #36.4.54.

Probst, Siegmund. See #36.4.54.

Sefrin-Weis, Heike. See #36.4.54.

Xu, Chuan Sheng. Study on Jacob Bernoulli's *Art of conjecturing* [in Chinese]. *Journal of Mathematical Research and Exposition* **27** (1) (2007), 212–218. Analyzes key ideas in this

first foundational work on the theory of probability, such as Bernoulli's law of large numbers and Bernoulli's number, and discusses the history of its publication. (KP) #36.4.56

See also: #36.4.36; and #36.4.39.

18th century

d'Alembert, Jean le Rond. *Œuvres complètes. Série III. Opuscules et mémoires mathématiques, 1757–1783. Volume 1. Opuscules mathématiques. Tome 1: 1761.* [Complete Works. Series III. Mathematical Papers and Memoirs, 1757–1783. Volume 1. Mathematical Papers. Vol. 1: 1761.] Pierre Crèpel, Alexandre Guilbaud, and Guillaume Jouve (eds.), Paris: CNRS Éditions, 2008, clxxxi+447 pp. This volume of the complete works of Jean le Rond d'Alembert constitutes the first of many works of d'Alembert in the second phase of his scientific production (1757–1783). (LM) #36.4.57

Bullynck, Maarten. Decimal periods and their tables: A German research topic (1765–1801). *Historia Mathematica* 36 (2) (2009), 137–160. The author discusses the growing interest in regular patterns in the decimal expansion of common fractions in 18th-century Germany and the development of understanding of these patterns from early work of Lambert to Gauss giving a solid number-theoretic interpretation. (DJM) #36.4.58

de Carvalho, Maria Pires. The chord method [in Portuguese]. *Boletim da Sociedade Portuguesa de Matemática* (Special Issue) (2008), 61–72. The paper discusses the chord method for finding rational points on curves, as mentioned by Euler in one of the letters to a German princess. See the review by Solomon Marcus in *Mathematical Reviews* 2414487 (2009d:01013). (LD) #36.4.59

Del Centina, Andrea. Unpublished manuscripts of Sophie Germain and a reevaluation of her work on Fermat's last theorem. *Archive for History of Exact Sciences* 62 (4) (2008), 349–392. This paper presents and discusses some manuscripts and a letter of Sophie Germain concerning her work on Fermat's last theorem. (LM) #36.4.60

Dunham, William. When Euler met L'Hôpital. *Mathematics Magazine* 82 (1) (2009), 16–25. Euler's dexterity with indeterminate forms and use of l'Hôpital's rule is displayed. The author's disclaimer is that the title refers to a “meeting of minds, not of mathematicians.” (DJM) #36.4.61

Gautschi, Walter. Leonhard Eulers Umgang mit langsam konvergenten Reihen [Leonhard Euler's handling of slowly convergent series]. *Elemente der Mathematik* 62 (4) (2007), 174–183. This article discusses the procedures that Euler used to handle slowly-convergent series. Examples include the Basel problem, the Euler γ constant, and Lambert series. See the review by S.L. Segal in *Mathematical Reviews* 2376765 (2009d:01015). (LD) #36.4.62

Gilain, Christian. Euler, d'Alembert et la controverse sur les logarithmes [Euler, d'Alembert and the debate about logarithms]. *Quaderni. Accademia delle Scienze di Torino* 16 (2008), 43–60. This article discusses the exchange of letters (and the resulting controversy) between Euler and d'Alembert on how to extend logarithms to negative and complex numbers. See the review by M.E. Muldoon in *Mathematical Reviews* 2413006 (2009d:01017). (LD) #36.4.63

Glaus, John S.D. See #36.4.67.

Jongmans, François. In vino veritas, in dolio calamitas. *The Mathematical Scientist* **33** (1) (2008), 1–7. This paper reviews five classical geometrical models for the volume of a barrel and proposes three new geometrical models motivated by Charles Camus' ideas. It also shows, using integral calculus, that all eight volume expressions have a common structure. (LM) #36.4.64

Machiavelo, António. Euler and the secrets of numbers [in Portuguese]. *Boletim da Sociedade Portuguesa de Matemática* (Special Issue) (2008), 35–60. This paper describes Euler's work in number theory, spanning 95 articles and a book, and indicates the later significance of his work. See the review by Solomon Marcus in *Mathematical Reviews* 2414486. (2009d:01018). (DJM) #36.4.65

Nicolas, François. Sur la formalisation par Euler du plaisir musical [On Euler's formalization of musical pleasure]. *Gazette des Mathématiciens* **117** (2008), 35–47. This paper presents a single aspect of the formalization of Eulerian music, i.e., his theory of musical pleasure. (LM) #36.4.66

du Pasquier, Louis-Gustave. *Leonhard Euler and His Friends*, trans. John S.D. Glaus, CreateSpace, 2008, 173 pp. The first English translation of du Pasquier's 1927 biography of Euler, *Euler et ses Amis*. The emphasis of the biography is on Euler and the circles of friends, colleagues and patrons with whom he interacted, rather than technical description of mathematics. See the review by Herbert E. Kasube at *MAA Reviews*, <http://www.maa.org/maareviews/01211.html>. (DJM) #36.4.67

Schneider, Ivo. I contributi di Euler alla stocastica nel contesto della letteratura contemporanea [Euler's contributions to stochastics in the context of the contemporary literature]. *Quaderni. Accademia delle Scienze di Torino* **16** (2008), 103–121. In Euler's *Opera Omnia*, series I, vol. 7, the editor, Louis-Gustave du Pasquier, brought together Euler's writings on probability theory, the theory of errors, mathematical statistics, and political arithmetic. The author of the present article discusses and extends Du Pasquier's presentation. See the review by Pierre Crépel in *Mathematical Reviews* 2413009 (2009d:01026). (LD) #36.4.68

See also: #36.4.11; #36.4.53; and #36.4.56.

19th century

Audin, Michèle. *Souvenirs sur Sofia Kovalevskaya* [*Souvenirs of Sofia Kovalevskaya*], Paris: Calvage and Mounet, 2008, ix+286 pp. Even though the author declares that her book is “not history” but rather “a personal book,” the volume includes discussions of Kovalevskaya's contributions to mathematical analysis and mathematical physics and it chronicles her professional life. The author emphasizes “the deep unity of the different aspects of Sofia: scientist, writer, revolutionary.” See the review by Antonio Martínón in *Zentralblatt MATH* 1154.01009. (JA) #36.4.69

Bao, Fang Xun. See #36.4.89.

Beltrami, Eugenio. *Un grande matematico dell'ottocento. Omaggio a Eugenio Beltrami (1835–1900)* [*A Great Mathematician of the 19th Century. Papers in Honor of Eugenio Beltrami (1835–1900)*]. Papers from the congress dedicated to Eugenio Beltrami held in

Milano, October 14–15, 2004, Milan: LED - Edizioni Universitarie di Lettere Economia Diritto, 2007, 288 pp. Proceedings from a conference in honor of Eugenio Beltrami. The papers with more historical content are abstracted or listed separately as: #36.4.5; #36.4.71; #36.4.78; #36.4.87; #36.4.91; #36.4.93; and #36.4.128. (DJM) #36.4.70

Bittanti, Sergio. Dai dati al modello con l'ausilio della scomposizione matriciale di Beltrami [Identifying a model from data using Beltrami's matrix decomposition], in #36.4.70, pp. 239–272. Singular value decompositions (SVD) were first introduced by Beltrami in 1873. In this paper, the author describes the development of SVD and automatic control theory and gives some examples. See the review by Fabio Di Benedetto in *Mathematical Reviews* 2374680 (2009a:65086). (DJM) #36.4.71

Bois, Pierre-Antoine. Joseph Boussinesq (1842–1929): A pioneer of mechanical modeling at the end of the 19th century. *Comptes Rendus. Mécanique. Académie des Sciences, Paris* 335 (9–10) (2007), 479–495. This is a review of Boussinesq's contributions to surface waves, potential theory, turbulence, and the analytic theory of heat. See the review by Teun Koetsier in *Zentralblatt MATH* 1156.01008. (JA) #36.4.72

Bolzano, Bernard. *Bernard Bolzano—Gesamtausgabe. Reihe III. Briefwechsel. Band 3. Teil 1: Briefe an František Příhonský, 1824–1848* [Bernard Bolzano—Collected works. Series III. Correspondence. Vol. 3. Part 1: Letters to František Příhonský, 1824–1848]. Edited and with an introduction by Jan Berg, Stuttgart: Friedrich Frommann Verlag Günther Holzboog GmbH & Co., 2005, 321 pp. See the review by Joseph W. Dauben in *Mathematical Reviews* 2367399 (2009e:01018a). (LD) #36.4.73

Bolzano, Bernard. *Bernard Bolzano—Gesamtausgabe. Reihe III. Briefwechsel. Band 3. Teil 2: Briefe an František Příhonský, 1824–1848* [Bernard Bolzano—Collected works. Series III. Correspondence. Vol. 3. Part 2: Letters to František Příhonský, 1824–1848]. Edited and with an introduction by Jan Berg, Stuttgart: Friedrich Frommann Verlag Günther Holzboog GmbH & Co., 2005, vi+323–597 pp. See the review by Joseph W. Dauben in *Mathematical Reviews* 2367401 (2009e:01018b). (LD) #36.4.74

Bolzano, Bernard. *Bernard Bolzano—Gesamtausgabe. Reihe III. Briefwechsel. Band 3. Teil 3: Briefe an František Příhonský, 1824–1848* [Bernard Bolzano—Collected works. Series III. Correspondence. Vol. 3. Part 3: Letters to František Příhonský, 1824–1848]. Edited and with an introduction by Jan Berg, Stuttgart: Friedrich Frommann Verlag Günther Holzboog GmbH & Co., 2005, vi+597–825 pp. These three volumes collect the correspondence of Bolzano with his former student František Příhonský, who studied with Bolzano at the University of Prague. The correspondence deals with Bolzano's efforts to publish his major philosophical work, the *Wissenschaftslehre* and his major mathematical work, the *Größenlehre*. See the review by Joseph W. Dauben in *Mathematical Reviews* 2367400 (2009e:01018c). (LD) #36.4.75

Bolzano, Bernard. *Bernard Bolzano—Gesamtausgabe. Reihe III. Briefwechsel. Band 5. Teil 1: Briefe an Josef Sommer und andere, 1812–1848* [Bernard Bolzano—Collected works. Series III. Correspondence. Vol. 5. Part 1: Letters to Josef Sommer and Others, 1812–1848]. Edited and with an introduction by Jan Berg, Stuttgart: Friedrich Frommann Verlag Günther Holzboog GmbH & Co., 2005, 275 pp. This volume of the collected works of Bolzano contains, among other correspondence, the 42 letters that Bolzano wrote to Josef Sommer. The one letter of mathematical importance is that sent to Werneburg on January 17, 1812, in which Bolzano comments on Werneburg's *Gründzuge der Mathematik*. See the

review by Joseph W. Dauben in *Mathematical Reviews* 2367403 (2009g:01011). (LD) #36.4.76

Brechenmacher, Frédéric. La controverse de 1874 entre Camille Jordan et Leopold Kronecker [The 1874 controversy between Camille Jordan and Leopold Kronecker]. *Revue d'Histoire des Mathématiques* **13** (2) (2007), 187–257. The quarrel of the title “concerned the organization of the theory of bilinear forms” and was based on theorems of Jordan and Weierstrass. See the review by Roman Murawski in *Zentralblatt MATH* 1157.01002. (JA) #36.4.77

Cercignani, Carlo. La fisica e la matematica di Eugenio Beltrami [The physics and mathematics of Eugenio Beltrami], in #36.4.70, pp. 5–20. A brief biographical sketch of Beltrami and his main contributions to mathematics and physics. (DJM) #36.4.78

Chan, Wayne S. Key enclosed: Examining the evidence for the missing key letter of the Beale cipher. *Cryptologia* **32** (1) (2008), 33–36. Analyzes evidence for the existence of an authentic key letter to the notorious unsolved ciphertext attributed to the (possibly apocryphal) Thomas Beale, who allegedly encoded in it crucial information about treasure that he buried in 1820 in Bedford County, Virginia. (KP) #36.4.79

Corry, Leo. Number crunching vs. number theory: Computers and FLT, from Kummer to SWAC (1850–1960), and beyond. *Archive for History of Exact Sciences* **62** (4) (2008), 393–455. This paper discusses the computational tools employed in attempts to deal with individual cases of Fermat’s Last Theorem in historical contexts. It also investigates the role that computations played in number theory. (LM) #36.4.80

Despeaux, Sloan Evans. Mathematics sent across the channel and the Atlantic: British mathematical contributions to European and American scientific journals, 1835–1900. *Annals of Science* **65** (1) (2008), 73–99. The author investigates British participation internationally during the 19th century through an analysis of British mathematical contributions to scientific journals outside of Britain. In particular, this paper considers the extent of publication by British mathematicians in order to characterize the role of foreign publication in 19th-century British mathematics. (LM) #36.4.81

Ewen, Wolfgang. *Carl Stumpf und Gottlob Frege* [Carl Stumpf and Gottlob Frege], Würzburg: Königshausen & Neumann; Köln: Univ. Köln (Dissertation 2007), 187 pp. The first book comparing the early ideas of Carl Stumpf, especially as expressed in his Habilitation dissertation, with those of his contemporary Gottlob Frege. See the review by Øystein Linnebo in *Zentralblatt MATH* 1158.01004. (DJM) #36.4.82

Fudali, Stanislaw. Hermann Grassmann *Ausdehnungslehre* (on the 160th anniversary of the first edition) [in Polish], in #36.4.22, pp. 45–61. #36.4.83

Grabiner, Judith. Why did Lagrange “prove” the parallel postulate? *American Mathematical Monthly* **116** (1) (2009), 3–18. The author considers three questions about Lagrange’s unpublished 1806 paper on the parallel postulate: what were the actual contents of the paper; why did Lagrange use the procedure he did, and what was the importance to him of this problem in geometry that led him to take on such a risky proposition? (DJM) #36.4.84

Hawkins, Thomas. Frobenius and the symbolical algebra of matrices. *Archive for History of Exact Sciences* **62** (1) (2008), 23–57. The paper focuses on an 1877 paper by

Frobenius on the Cayley–Hamilton theorem and the growing role of matrices in linear algebra. See the review by Jaroslav Zemánek in *Mathematical Reviews* 2365766 (**2009e**:01009). (DJM) #36.4.85

Schinzel, Andrzej. Netto and Weber textbooks in algebra [in Polish], in #36.4.22, pp. 153–157. #36.4.86

Spagnolo, Sergio. Il principio di Huygens e la formula di Kirchhoff–Beltrami [The Huygens principle and the Kirchhoff–Beltrami formula], in #36.4.70, pp. 99–114. A late work of Beltrami’s is an improvement to Kirchhoff’s proof of the Poisson formula. The author compares the techniques used by Kirchhoff and Beltrami. (DJM) #36.4.87

Stuhler, Ulrich; Thiel, Carsten; and Wiedmann, Stefan. About the cover: Alfred Clebsch on crystallography. *Bulletin of the American Mathematical Society* **45** (1) (2008), 153–156. The cover shows a page from a lecture course given by Clebsch on crystallography. The brief paper considers some connections between rational proportions in crystals and rational vector spaces. See the review by Reinhard Siegmund-Schultze in *Zentralblatt MATH* 1158.01005. (DJM) #36.4.88

Sun, Qing Hua; and Bao, Fang Xun. Gibbs and his vector theory [in Chinese]. *Studies in the History of Natural Sciences* **27** (1) (2008), 83–93. Discusses Josiah Gibbs’s invention in the 1880s of vector analysis, its inspiration in Maxwell’s application of quaternions, and its influential applications in physics and astronomy. (KP) #36.4.89

Swetz, Frank. The mystery of Robert Adrain. *Mathematics Magazine* **81** (5) (2008), 332–344. Robert Adrain (1775–1843) was a professor at Columbia, started a journal, *The Analyst*, and produced a version of Hutton’s *Mathematics*. He was a promoter of mathematics and a significant character in the early 19th century development of American mathematics education. (DJM) #36.4.90

Tazzioli, Rossana. Equazioni di Maxwell e teoria dell’elasticità nell’opera di Beltrami [Maxwell equations and elasticity theory in the works of Beltrami], in #36.4.70, pp. 49–70. Beltrami wrote numerous papers applying geometry to physics, and attempted to extend physical theories to Riemannian manifolds. In particular, Beltrami showed that an ether with a system of tensions and pressures deduced by Maxwell could not exist. (DJM) #36.4.91

Thiel, Carsten. See #36.4.88.

Ullrich, Peter. Carl Friedrich Gauss zwischen reiner und angewandter Mathematik [Carl Freiderich Gauss between pure and applied mathematics]. *Mathematische Semesterberichte* **54** (2) (2007), 219–238. This is a survey of Gauss’ major scientific activities in both pure and applied mathematics. See the review by Hans Fischer in *Zentralblatt MATH* 1154.01012. (JA) #36.4.92

Vesentini, Edoardo. Eugenio Beltrami e la geometria differenziale [Eugenio Beltrami and differential geometry], in #36.4.70, pp. 21–38. An analysis of Beltrami’s contributions to differential geometry. (DJM) #36.4.93

Wiedmann, Stefan. See #36.4.88.

See also: #36.4.8; #36.4.53; #36.4.60; #36.4.64; and #36.4.94.

20th century

Agnew, Alfonso F.; Bobe, Alexandru; Boskoff, Wladimir G.; and Suceavă, Bogdan D. Gheorghe Țițeica and the origins of affine differential geometry. *Historia Mathematica* **36** (2) (2009), 161–170. The article concerns Romanian geometer Țițeica and the introduction of his centro-affine invariant. The authors concentrate on the period 1892–1909, giving background on Țițeica's work, his education in Paris under Darboux, and his first decade of research. (DJM) #36.4.94

Agresti, Alan; and Gottard, Anna. Independence in multi-way contingency tables: S.N. Roy's breakthroughs and later developments. *Journal of Statistical Planning and Inference* **137** (11) (2007), 3216–3226. The paper focuses on Roy's introduction of general contingency tables and independence and chi-squared tests for general tables. The authors also consider the connections between Roy's results and later developments of loglinear modeling. (DJM) #36.4.95

Anderson, Ian. Early examples of spouse avoidance. *Bulletin of the Institute of Combinatorics and its Applications* **54** (2008), 47–52. This paper looks at early appearances of the problem of spouse avoiding mixed doubles round robin tournaments in the work of J.T. Mitchell, E.H. Moore, and H. Dudeney. See the review by A. Rosa in *Mathematical Reviews* 2444779 (2009f:05002). (LD) #36.4.96

Arias Vila, Nelson; and Baracca, Angelo. Who proposed the Rayleigh–Jeans formula? *LLULL* **29** (63) (2006), 5–18 (2007). This paper analyzes the development of Rayleigh's and Jeans's ideas between 1900 and 1905 which led to the so-called 'Rayleigh–Jeans formula'. (LM) #36.4.97

Baksalary, Oskar Maria; and Styan, George P.H. Some comments on the life and publications of Jerzy K. Baksalary (1944–2005). *Discussiones Mathematicae. Probability and Statistics* **28** (1) (2008), 5–64. This paper contains scientific and personal comments by collaborators and students of Jerzy Baksalary on his publications and his life. A complete list of Jerzy Baksalary's publications is included. See the review by Roman Murawski in *Zentralblatt MATH* 1157.01004. (JA) #36.4.98

Baracca, Angelo. See #36.4.97.

Bartlow, Thomas L.; and Zitarelli, David. Who was Miss Mullikin? *American Mathematical Monthly* **116** (2) (2009), 99–114. Anna Margaret Mullikin (1893–1975) was R.L. Moore's third Ph.D. student and wrote a dissertation on topology that led to extensive applications and generalizations. The authors seek to rescue her from undeserved obscurity. (DJM) #36.4.99

Becker, Oskar. Oskar Becker: Briefwechsel mit Dietrich Mahnke herausgegeben von Bernd Peter Aust und Jochen Sattler [Oskar Becker: Correspondence with Dietrich Mahnke edited by Bernd Peter Aust and Jochen Sattler], in #36.4.12, pp. 245–278. #36.4.100

Bénassy, Jean-Pascal; Böhm, Volker; and Guesnerie, Roger. In memory of Gérard Debreu, 1921–2004. *Macroeconomic Dynamics* **9** (2) (2005), 147–149. Describes Debreu's life and work in economics and mathematics, mostly at Chicago, Yale, and UC Berkeley. He won the 1983 Nobel Prize in economics for his rigorous treatment of general equilibrium and his use of new analytical methods. (KP) #36.4.101

Biryukov, B.V.; and Shakhov, V.I. Early applications of logic to technology: Ehrenfest, Gersevanov and Shestakov. From applications of logic to civil engineering and switching circuits to the logic theory of measurement of physical quantities [in Russian], in Karpenko, A.S., ed., *Logicheskie issledovaniya* (14) (Moscow: Nauka, 2007), pp. 73–104. Traces the development of the idea of applying logic to technology from its suggestion at the start of the century by the theoretical physicist P. Ehrenfest to the 1923 work of Gersevanov (which was not influenced by Ehrenfest) and the later research of Shestakov (which was). (KP) #36.4.102

Biryukov, B.V.; Verstin, I.S.; and Levin, V.I. Life and career of Viktor Ivanovich Shestakov—the creator of the logic theory of switching circuits [in Russian], in Karpenko, A.S., ed., *Logicheskie issledovaniya* (14) (Moscow: Nauka, 2007), pp. 27–72. Drawing on family archives, the authors describe the life and scientific work of Viktor Ivanovich Shestakov (1907–1987), who created the logic theory of switching circuits. See the review by V.N. Saliĭ in *Zentralblatt MATH* 1154.01017. (DJM) #36.4.103

Bobe, Alexandru. See #36.4.94.

Böhm, Volker. See #36.4.101.

Boskoff, Wladimir G. See #36.4.94.

Brading, K.A.; and Ryckman, T.A. Hilbert’s “Foundations of physics”: Gravitation and electromagnetism within the axiomatic method. *Studies in History and Philosophy of Science. Part B. Studies in History and Philosophy of Modern Physics* 39 (1) (2008), 102–153. Contends that the recent discovery of printer’s proofs from December 1915 for Hilbert’s seminal two-part paper, and analysis of Hilbert’s cuts in the published version, reveal its importance as “part of a wider research program within the overarching framework of the axiomatic method”, as well as the coherence and significance of its second part. (KP) #36.4.104

Buchberger, Bruno. Bruno Buchberger’s PhD thesis 1965: An algorithm for finding the basis elements of the residue class ring of a zero-dimensional polynomial ideal. Translation from the German. *Journal of Symbolic Computation* 41 (3–4) (2006), 475–511. This paper is the English translation (by Michael P. Abramson) of Bruno Buchberger’s PhD thesis in which he introduced the algorithmic theory of Gröbner bases. (LM) #36.4.105

Buchberger, Bruno. Comments on the translation of my PhD thesis: “An algorithm for finding the basis elements of the residue class ring of a zero-dimensional polynomial ideal”. *Journal of Symbolic Computation* 41 (3–4) (2006), 471–474. This paper consists of some comments by Buchberger on the English translation (by Michael P. Abramson) of his 1965 PhD thesis. (LM) #36.4.106

Christensen, Chris; and Gladfelter, Suzanne. Taking a cryptology class to Bletchley Park. *Cryptologia* 32 (1) (2008), 23–32. Pedagogical suggestions for class trips to the World War II cryptology headquarters in Milton Keynes, UK, now the British National Codes Centre, as well as nearby cryptologic sites. (KP) #36.4.107

Chrobak, Karol. Logic as the basis of the philosophy of Leon Chwistek [in Polish], in #36.4.22, pp. 15–20. #36.4.108

Daepf, Ulrich; Gauthier, Paul; Gorkin, Pamela; and Schmieder, Gerald. Alice in Switzerland: The life and mathematics of Alice Roth. *Mathematical Intelligencer* 27 (1)

(2005), 41–53. Swiss mathematician Alice Roth (1905–1977) developed in her 1938 doctoral dissertation an example of a compact set on which not every continuous function can be approximated uniformly by rational functions, the so-called “Swiss cheese”. Her life and research, which she resumed in the early 1970s following her retirement from teaching, are discussed. (KP) #36.4.109

Davis, Philip J. Otto Neugebauer raps my knuckles. *Mathematical Intelligencer* **29** (2) (2007), 16–17. A brief reminiscence about how Neugebauer disproved a suggestion of the author’s that Ptolemy’s cycles represented an example of curve fitting. See the review by Olaf Teschke in *Zentralblatt MATH* 1158.01309. (DJM) #36.4.110

Dawidowicz, Antoni Leon. Zdzisław Opial (on the 30th anniversary of his death) [in Polish], in #36.4.22, pp. 21–25. #36.4.111

Dawidowicz, Antoni Leon. Masterpieces of Szczepan Jeleński [in Polish], in #36.4.22, pp. 27–32. #36.4.112

Debnath, Lokenath. *Sir James Lighthill and Modern Fluid Mechanics*, London: Imperial College Press, 2008, xxiv+326 pp. A biography and appreciation of the British applied mathematician Michael James Lighthill (1924–1998) on the 10th anniversary of his unfortunate death in a swimming accident. A man who referred to himself as a “lifelong devotee of fluid mechanics”, he contributed to a wide range of areas in applied mathematics. See the review by Teodora-Liliana Rădulescu in *Mathematical Reviews* 2435284 (2009e:76002). (DJM) #36.4.113

Duda, Roman. The significance of the monograph: Felix Hausdorff, *Grundzüge der Mengenlehre* [in Polish], in #36.4.22, pp. 33–43. #36.4.114

Emrich, Johannes. Beckers Anwendung der Denkfigur des offenen Horizonts auf mathematische Objekte [Becker’s application of the conception of the open horizon to mathematical objects], in #36.4.12, pp. 143–152. #36.4.115

Fenster, Della. Artin in America (1937–1958): A time of transition, in #36.4.146, pp. 99–118. #36.4.116

Fritsch, Harald. *Escape from Leipzig*. Translated from the German by K. Heusch. With a foreword written by G. ’t Hooft. Hackensack, NJ: World Scientific, 2008, xii+125 pp. While he was a student at the University of Leipzig in the 1960s, Fritsch and some student colleagues protested the destruction, by the GDR, of the famous St. Paul’s church (built in 1204). After this protest was unsuccessful, Fritsch and another student managed a daring escape, a portion of whose journey consisted of paddling a fold-up canoe from Bulgaria across the Black Sea to Turkey. See the review by Silke Göbel in *Zentralblatt MATH* 1154.01018. (JA) #36.4.117

Gandon, Sébastien. Which arithmetization for which logicism? Russell on relations and quantities in *The Principles of Mathematics. History and Philosophy of Logic* **29** (1) (2008), 1–30. Describes Russell’s theory of quantity as a consequence of his rejection of the “arithmetization stance” wherein the logical deducibility of the various branches of mathematics requires first reducing them to arithmetic. On the contrary, according to Russell, they “are all to be directly derived from the theory of relations”. (KP) #36.4.118

Gauthier, Paul. See #36.4.109.

Giugliano, Antonello. Zahl und Zeit: Becker zwischen Nietzsche und Heidegger [Number and time: Becker between Nietzsche and Heidegger], in #36.4.12, pp. 47–58. #36.4.119

Gladfelter, Suzanne. *See* #36.4.107.

Gorkin, Pamela. *See* #36.4.109.

Gottard, Anna. *See* #36.4.95.

Guesnerie, Roger. *See* #36.4.101.

Hachaj, Jadwiga; and Jakóbczak, Piotr. On Poincaré’s theorem on nonexistence of biholomorphic mapping of the ball on the polydisk in C^n , $n > 1$ [in Polish], in #36.4.22, pp. 75–79. #36.4.120

Havel, I.M. Sixty years of cybernetics: Cybernetics still alive. *Kybernetika* **44** (3) (2008), 314–327. This paper presents themes and ideas on the principal concepts of cybernetics that have emerged during the last several decades. (LM) #36.4.121

Hejhal, Dennis, Coordinating Ed. Remembering Atle Selberg, 1917–2007. *Notices of the American Mathematical Society* **56** (6) (2009), 692–710. Personal reminiscences of the number theorist Atle Selberg, with contributions from G.D. Mostow, Dennis Hejhal, Peter Sarnak, John Friedlander, Dorian Goldfeld, Samuel J. Patterson, Roger Heath-Brown, K.M. Tsang, Wenzhi Luo, Brian Conrey, Amit Ghosh, Lennart Carleson, Paul Malliavin, and Nils A. Baas. (DJM) #36.4.122

Hirzebruch, Friedrich; and Simon, Udo. Nachruf auf Shiing-Shen Chern [Obituary of Shiing-Shen Chern]. *Jahresbericht der Deutschen Mathematiker-Vereinigung* **108** (4) (2006), 197–217. This obituary of the mathematician Shiing-Shen Chern (1911–2004) sketches his research contributions and his influence on the development of geometry and topology. It also includes a short biography. (LM) #36.4.123

Hoffmann, Dieter. “. . . you can’t say to anyone to their face: Your paper is rubbish.” Max Planck as Editor of the *Annalen der Physik*. *Annalen der Physik* (8) **17** (5) (2008), 273–301. This paper investigates Max Planck’s diverse relationships with the *Annalen der Physik* as contributor of scientific papers as well as editor. It also analyzes his editorship in the context of the development of physics in the first quarter of the 20th century. (LM) #36.4.124

Höppner, Hans-Joachim. Zu Artins Theorie der Zöpfe [On Artin’s theory of braids], in #36.4.146, pp. 169–186. #36.4.125

Jakóbczak, Piotr. *See* #36.4.120.

Kanamori, Akihiro. Cohen and set theory. *Bulletin of Symbolic Logic* **14** (3) (2008), 351–378. The paper gives an overview of P. Cohen’s work in set theory, particularly the method of forcing, during the 1960s. See the review by Siegfried Gottwald in *Mathematical Reviews* 2440597 (2009d:03006). (LD) #36.4.126

Karpenko, A.S. *See* #36.4.102.

Kreuzer, Alexander. *See* #36.4.146.

Levin, V.I. *See* #36.4.103.

Libby, P.A. *See* #36.4.143.

Mačák, Karel. Emil Artin in Reichenberg [Emil Artin in Reichenberg], in #36.4.146, pp. 1–11. #36.4.127

Magri, Franco. Riflessioni sul contributo di Levi Civita e della scuola geometrica italiana alla teoria dei sistemi separabili della meccanica [Reflections on the contribution of Levi Civita and the Italian school of geometry to the theory of separable systems in mechanics], in #36.4.70, pp. 115–126. The paper views Levi Civita's system of separability conditions from the perspective of Beltrami's theory of differential invariants, showing how Levi Civita's conditions can be cast into a tensorial form. (DJM) #36.4.128

Majer, Ulrich; and Sauer, Tilman. Intuition and the axiomatic method in Hilbert's foundation of physics. Hilbert's idea of a recursive epistemology in his third Hamburg lecture, in Carson, Emily et al., eds., *Intuition and the Axiomatic Method (Western Ontario Series in Philosophy of Science 70)*, Dordrecht: Springer, 2006, pp. 213–233. In his third and last Hamburg lecture of 1923, David Hilbert claimed to have solved certain epistemological questions concerning “the unified field theory and the significance of world equations for the whole of physics.” See the review by Volker Peckhaus in *Zentralblatt MATH* 1157.01003. (JA) #36.4.129

Mancosu, Paolo; and Ryckman, T.A. Geometry, physics, and phenomenology: Four letters of O. Becker to H. Weyl, in #36.4.12, pp. 153–227. #36.4.130

Mancosu, Paolo. “Das Abenteuer der Vernunft”: O. Becker and D. Mahnke on the phenomenological foundations of the exact sciences, in #36.4.12, pp. 229–243. #36.4.131

Markov, A.A. An example of statistical investigation of the text Eugene Onegin concerning the connection of samples in chains. *Science in Context* 19 (4) (2006), 591–600. This is a translation from the Russian of A.A. Markov's January 23, 1913 lecture at the Royal Academy of Sciences in St. Petersburg. Here, Markov first applied his theory of the probability of trials that were dependent on each other to the beginnings of the text of *Eugene Onegin*. A detailed commentary is included. See the review by Andrea Bréard in *Zentralblatt MATH* 1155.01005. (JA) #36.4.132

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Mazliak, Laurent. On the exchanges between Wolfgang Doeblin and Bohuslav Hostinský. *Revue d'Histoire des Mathématiques* 13 (1) (2007), 155–180. Discusses the correspondence sent by Doeblin to Hostinský in 1936–38, containing “some aspects of the general theory of Markov chains and the solutions of the Chapman–Kolmogorov equation that Doeblin was then establishing for his Ph.D. thesis”. (KP) #36.4.134

Milne, Peter. Russell's completeness proof. *History and Philosophy of Logic* 29 (2008), 31–62. This article reviews Russell's proof, in 1906, of the completeness theorem for classical propositional calculus. See the review by Branislav Boričić in *Mathematical Reviews* 2379411 (2009d:03007). (LD) #36.4.135

- Mioduszewski, Jerzy. The Warsaw Seminar in Topology, 1929–1939 [in Polish], in #36.4.22, pp. 137–151. #36.4.136
- Mumm, Emil. Artin an der Universität Wien [Emil Artin at the University of Vienna], in #36.4.146, pp. 13–20. #36.4.137
- Nemat-Nasser, S. See #36.4.143.
- Odefey, Alexander. “His love of music was perhaps as deep as his love of mathematics.” Zur Musikalität Emil Artins und seiner Familie [On the musicality of Emil Artin and his family], in #36.4.146, pp. 187–215. #36.4.138
- Ohanian, Hans C. *Einstein’s Mistakes. The Human Failings of Genius*, New York: W.W. Norton & Co., 2008. xx+394 pp. This work is a biography of Einstein focusing on the successes and failures in Einstein’s scientific and personal life. For example, Einstein gave seven proofs of $E = mc^2$ during his lifetime, all incorrect according to the author. See the review by Alan S. McRae in *Mathematical Reviews* 2426634 (2009f:01012). (LD) #36.4.139
- Parshall, Karen Hunger. Marshall Stone and the internationalization of the American mathematical research community. *Bulletin of the American Mathematical Society* 46 (3) (2009), 459–482. The author describes how the American mathematical community, and Marshall Stone in particular, spent the central decades of the 20th century deliberately reaching out from existing as a national community to partaking in an international one. (DJM) #36.4.140
- Peckhaus, Volker. Logic and metaphysics: Heinrich Scholz and the scientific world view. *Philosophia Mathematica. Series III* 16 (1) (2008), 78–99. Discusses the relation of the philosopher Heinrich Scholz (1884–1956) to the neo-positivist movement and its concept of the scientific world view, as well as Scholz’s contributions to logic and foundations. (KP) #36.4.141
- Peckhaus, Volker. Becker und Zermelo [Becker and Zermelo], in #36.4.12, pp. 279–297. #36.4.142
- Penner, S. S.; Williams, F.A.; Libby, P.A.; and Nemat-Nasser, S. Von Kármán’s work: The later years (1952–1963) and legacy, in Davis, Stephen H. et al., eds., *Annual Review of Fluid Mechanics*. Vol. 41, Palo Alto, CA, 2009, pp. 1–15. This paper reviews Von Kármán’s work of his later years (from 1952 until his death in 1963) and provides a comment of his scientific legacy. (LM) #36.4.143
- Poincaré, Henri. *La correspondance entre Henri Poincaré et les physiciens, chimistes, et ingénieurs* [Correspondence Between Henri Poincaré and Physicists, Chemists, and Engineers]. Presented and annotated by Scott Walter, in collaboration with É. Bolmont and A. Coret (Eds.), Basel, Boston, Berlin: Birkhäuser, 2007, xxii+493 pp. This volume of Poincaré’s correspondence includes 269 letters between Poincaré and 61 physicists, chemists, and engineers, as well as additional material including proposals to the Nobel Prize committee. This is a careful scholarly critical edition of the letters and includes much background material on the correspondents and their contexts. See the review by Tilman Sauer in *Historia Mathematica* 36 (2) (2009) 185–188. (DJM) #36.4.144
- Pollicott, M.; Sharp, R.; Tuncel, S.; and Walters, P. The mathematical research of William Parry FRS. *Ergodic Theory and Dynamical Systems* 28 (2) (2008), 321–337. This paper provides an account of Bill Parry’s mathematical work. It also discusses his legacy

to the scientific community and the role he played in founding the journal *Ergodic Theory and Dynamical Systems* and in leading the international school in ergodic theory at Warwick University. (LM) #36.4.145

Reich, Karin; and Kreuzer, Alexander, eds. *Emil Artin (1898–1962)—Beiträge zu Leben, Werk und Persönlichkeit [Emil Artin (1898–1962)—Contributions on his Life, Work, and Personality]*. With the collaboration of Catrin Pieri (*Algorismus. Studien zur Geschichte der Mathematik und der Naturwissenschaften [Algorismus. Studies in the History of Mathematics and the Natural Sciences]* **61**), Augsburg: Dr. Erwin Rauner Verlag, 2007, viii+231 pp. Items in this collection with historical content are listed separately as #36.4.116; #36.4.125; #36.4.127; #36.4.137; #36.4.138; #36.4.147; #36.4.153; #36.4.154; and #36.4.155. (LM) #36.4.146

Reich, Karin (with the assistance of Uta Hartmann and Alexander Odefey). Artin in Hamburg: 1922–1937 [Artin in Hamburg: 1922–1937], in #36.4.146, pp. 41–98. #36.4.147

Ryabukho, O.M.; and Sushchans'kyj, V.I. On the publications in algebra and number theory in “Zbirnyk Matematychno-Pryrodopysno-Likars'koji sektsiji Naukovoho Tovarystva im. Shevchenka” [in Ukrainian]. *Naukovyj Visnyk Chernivets'kogo Universytetu, Matematika* **374** (2008), 103–108. Details all algebra and number theory papers appearing in the “Collection of natural–mathematical–medical section of the Shevchenko Scientific Society”, the first Ukrainian-language scientific journal of its kind, from its inception in 1897 up to the foundation of the All-Ukrainian Academy of Sciences in 1919. (KP) #36.4.148

Ryckman, T.A. See #36.4.104; and #36.4.130.

Salvini, Giorgio. Enrico Fermi: A guiding light in a troubled century. *Rendiconti Lincei. Scienze Fisiche e Naturali* **19** (1) (2008), 103–119. Most of this paper is a review of Fermi's scientific life subdivided chronologically into four stages: his first research in Göttingen and Leiden; his years at the “physical department” in Rome; his emigration to the United States, where he worked on the atomic bomb and postwar projects; and his efforts to restore Italian physics following World War II. See the review by Karl–Heinz Schlote in *Zentralblatt MATH* 1158.01008. (JA) #36.4.149

Sauer, Tilman. See #36.4.129.

Schmieder, Gerald. See #36.4.109.

Shakhov, V.I. See #36.4.102.

Sharp, R. See #36.4.145.

Simon, Udo. See #36.4.123.

Soifer, Alexander. Ramsey theory before Ramsey. *Congressus Numerantium* **184** (2007), 33–44. This paper traces the roots of Ramsey theory back to works of D. Hilbert (1882), I. Schur (1916), and P.J.H. Baudet and B.L. van der Waerden (1927). See the review by F.J. Papp in *Zentralblatt MATH* 1154.01019. (JA) #36.4.150

Stekeler-Weithofer, Pirmin. Zu einer prototheoretischen Begründung der klassischen Mengenlehre [On a prototheoretical justification for classical set theory], in #36.4.12, pp. 299–324. #36.4.151

Styan, George P.H. See #36.4.98.

Suceavă, Bogdan D. *See* #36.4.94.

Sushchans'kyj, V.I. *See* #36.4.148.

Tennant, Neil. Carnap, Gödel, and the analyticity of arithmetic. *Philosophia Mathematica* (3) **16** (1) (2008), 100–112. Discusses the impact of Gödel's first incompleteness theorem on the philosophy of Rudolf Carnap, arguing that Carnap grasped its implications for the analyticity of arithmetic. (KP) #36.4.152

Thedy, Armin. Artins Hamburger Zeit 1958–1962; ein Zeitzeuge berichtet [Emil Artin's time in Hamburg 1958–1962; a contemporary witness reports], in #36.4.146, pp. 119–136. #36.4.153

Thiele, Rüdiger. Artin in Leipzig: 1919–1922 [Artin in Leipzig: 1919–1922], in #36.4.146, pp. 21–39. #36.4.154

Thiele, Rüdiger. Van der Waerden und Artin—der Weg zur modernen Algebra [Van der Waerden and Artin—the way to modern algebra], in #36.4.146, pp. 137–167. #36.4.155

Tuncel, S. *See* #36.4.145.

van Atten, Mark. Phenomenology's reception of Brouwer's choice sequences, in #36.4.12, pp. 101–117. #36.4.156

van Atten, Mark. The correspondence between Oskar Becker and Arend Heyting, in #36.4.12, pp. 119–142. #36.4.157

Véron, Jacques. Alfred J. Lotka and the mathematics of population. *Journal Électronique d'Histoire des Probabilités et de la Statistique* **4** (1) (2008), 10 pp. This paper considers the extensive work of Alfred Lotka on mathematical demography from 1907 until 1949, indicating his wide variety of interests and deep contributions. (DJM) #36.4.158

Verstin, I.S. *See* #36.4.103.

Walters, P. *See* #36.4.145.

Wang, Chao Wang. *See* #36.4.162.

Waniurski, Józef. Lucjan Edward Böttcher [in Polish], in #36.4.22, pp. 181–185. #36.4.159

Wille, Matthias. “Dem Unendlichen einen finiten Sinn beilegen”. Von Becker und Gentzen zu Lorenzen [“Attaching a finite meaning to infinity”: From Becker and Gentzen to Lorenzen], in #36.4.12, pp. 325–350. #36.4.160

Williams, F.A. *See* #36.4.143.

Wu, Wentsun. Memory of my first research teacher: The great geometer Chern Shiing-Shen, in Griffiths, Phillip A., ed., *Inspired by S.S. Chern. A Memorial Volume in Honor of a Great Mathematician (Nankai Tracts in Mathematics 11)*, Hackensack, NJ: World Scientific, (2006), 461–485. A two-part article, the first part detailing the author's early career from 1940 onwards, and the second presenting a technical analysis of 20th-century topology. See the review by J.-C. Martzloff in *Zentralblatt MATH* 1154.01020. (DJM) #36.4.161

Xu, Chuan Sheng. *See* #36.4.162.

Yang, Jing; Xu, Chuan Sheng; and Wang, Chao Wang. Research on the influence of L. Bachelier's *Theory of Speculation* on mathematics [in Chinese]. *Studies in the History of Natural Sciences* **27** (1) (2008), 94–104. Argues that Louis Bachelier's 1900 thesis, introducing many concepts of modern stochastic analysis, had a great impact on mathematics and economics. (KP) #36.4.162

Zabell, S.L. On Student's 1908 article "The probable error of a mean". With comments and a rejoinder by the author. *Journal of the American Statistical Association* **103** (481) (2008), 1–20. A centenary celebration of the paper by William Sealy Gosset (Student) on small sample inference. The author provides context for Gosset's paper, and explores Gosset's relationship with Ronald Fisher. See the review by David Bellhouse in *Mathematical Reviews* 2394634 (2009e:62066). (DJM) #36.4.163

Zitarelli, David. See #36.4.99.

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