HISTORIA MATHEMATICA **24** (1997), 457–477
ARTICLE NO. HM972175

ABSTRACTS

Edited by David E. Zitarelli

The purpose of this department is to give sufficient information about the subject matter of each publication to enable users to decide whether to read it. It is our intention to cover all books, articles, and other materials in the field.

Books for abstracting and eventual review should be sent to this department. Materials should be sent to Prof. David E. Zitarelli, Department of Mathematics, Temple University, Philadelphia, PA 19122, U.S.A. (E-mail: ZIT@VM.TEMPLE.EDU)

Readers are invited to send reprints, autoabstracts, corrections, additions, and notices of publications that have been overlooked. Be sure to include complete bibliographic information, as well as transliteration and translation for non-European languages. We need volunteers willing to cover one or more journals for this department.

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 20, Number 1, are numbered: 20.1.1, 20.1.2, 20.1.3, etc.

For reviews and abstracts published in Volumes 1 through 13 there are an *author index* in Volume 13, Number 4, and a *subject index* in Volume 14, Number 1.

The initials in parentheses at the end of an entry indicate the abstractor. In this issue there are abstracts by Víctor Albis (Bogotá), Joe Albree (Montgomery, AL), Irving Anellis (Ames, IA), Donald W. Bushaw (Pullman, WA), Karine Chemla (Paris), Ivan Erdelyi (Philadelphia), Leon Harkleroad (Poughkeepsie, NY), Calvin Jongsma (Sioux Center, IA), Victor J. Katz (Washington), Albert C. Lewis (Indianapolis), Elena A. Marchisotto (Northridge, CA), James V. Rauff (Decatur, IL), Gary S. Stoudt (Indiana, PA), and David E. Zitarelli.

AITKEN, A. C. *To Catch the Spirit. The Memoir of A. C. Aitken, with a Biographical Introduction by P. C. Fenton*, Dunedin, New Zealand: Univ. of Otago Press, 1995, 123 pp. $NZ 29.95. This book is in two almost equal parts, Fenton's biography of Aitken (1895–1967) and selections from Aitken's diaries (1923–1943). Aitken contributed to algebra, numerical analysis, and statistics, and was elected a FRS in 1936. See the review by Jeremy Gray in *Mathematical Reviews* **96m**:01019. (JA) #24.4.1

ALBIS, VICTOR S., *et al*., eds. *Memorias del seminario en conmemoración de los 400 años del nacimiento de René Descartes* [*Proceedings of the Seminar on the Occasion of the Fourth Centenary of the Birth of René Descartes*], Santafé de Bogotá: Academia colombiana de ciencias exactas, físicas y naturales, 1997, xii + 222 pp. Papers by Gonzalo Serrano, Alberto Campos, C. A. Cardona, J. A. Díaz, Mario Laserna, J.-P. Margot, D. R. Mahzary, M. Paty, G. Restrepo, and G. Thomson are abstracted separately. (VA) #24.4.2

ANGELELLI, IGNACIO. *See* #24.4.36 and #24.4.183.

ANELLIS, IRVING H. In Memoriam: Garrett Birkhoff, *Modern Logic* **7** (1997), 81–82. Obituary of Garrett Birkhoff, who died on November 22, 1996. (JVR) #24.4.3

ANELLIS, IRVING H. John Vincent Atanasoff—His Place in the History of Computer Logic and Technology, *Modern Logic* **7** (1997), 1–24. A short biography of Atanasoff followed by a discussion of the technological and logical aspects of the history of the invention of the modern computer. Focus is on the notion of using logic manifested as electronic circuits for calculating. Includes survey of recent histories of the computer in Russian. (JVR) #24.4.4

0315-0860/97 $25.00

ANELLIS, IRVING H. In Memoriam: Paul Erdös, *Modern Logic* **7** (1997), 83–84. Obituary of Paul Erdös, who died September 20, 1996. (JVR) #24.4.5

ANON. *Biographical Dictionary of Mathematicians*, New York: Scribner's, 1991, 2696 pp., four-volume set, $235. A collection of 1023 biographies of those mathematicians who were originally included in the 16-volume *Dictionary of Scientific Biography* and its two supplements. There are also a list of mathematicians by branch, a chronology, and an index. (DEZ) #24.4.6

ARENZANA, VÍCTOR. L'implication du calcul des probabilités et ses applications dans l'enseignement pendant les XIXe et XXe siecles: Le cas espagnol des oeuvres de Diego de Ollero et Manuel de Velasco, in #24.4.10, pp. 407–425. The Lagrangian paradigm as seen in probability textbooks. The studies of probability theory in Spain, especially the works of Diego Ollero and Manuel de Velasco. (VA) #24.4.7

ARHANGELSKII, A. V.; GOODEARL, K. R.; AND HUISGEN-ZIMMERMANN, B. Kiiti Morita (1915–1995), *Notices of the American Mathematical Society* **44** (1997), 680–684. An account of the most influential work of the Japanese mathematician, Kiiti Morita, in algebra and category theory and a sketch of his impact on general topology. (DEZ) #24.4.8

ARTMANN, BENNO. A Roman Icosahedron Discovered, *American Mathematical Monthly* **103** (1996), 132–133. The reclassification of a Roman object excavated near Bonn as an icosahedron is the first to come from a context ''inside'' mathematics. (DEZ) #24.4.9

AUSEJO, ELENA, AND HORMIGÓN, MARIANO. *Paradigms and Mathematics*, Madrid: Siglo XXI de España Editores, 1996, xviii + 501 pp. Proceedings of the 1994 International Symposium García Galdeano. The essays are abstracted separately. (VA) #24.4.10

AUSEJO, ELENA, AND VELAMAZÁN, MARÍA ÁNGELES. Mathematics and Liberalism in 19th-Century Spain, in #24.4.10, pp. 347–364. ''The involvement of this liberal army with mathematics occurs, on the one hand, in keeping with an enlightened tradition, and on the other, as a result of the ... need to supply the army with contingents of middle officers. In a context which, throughout the whole 19th century, is characterized by differentiated training for each force and corps, engineers and artillery men appear as protagonists of happy ending stories for the development of different mathematical disciplines, not only from the point of view of teaching and textbook production, but also in the research aspect.'' (VA) #24.4.11

AUSEJO, ELENA. *See also* #24.4.27.

AVENI, ANTHONY F.; MORANDI, STEVEN, J.; AND PETERSON, POLLY A. The Maya Number of Time: Intervalic Time Reckoning in the Maya Codices. I., *Journal of the History of Astronomy* **26** (1995), S1–S28. A useful, if somewhat flawed, study of the numbers, day names, and time intervals found in almanacs of the Mayan Dresden Codex and the Madrid Codex. Some attention is given to the nature of the almanacs. See the review by M. P. Closs in *Mathematical Reviews* **97a**:01004. (GSS) #24.4.12

BAGHERI, MOHAMMAD. Mathematical Problems of the Famous Iranian Poet Nāser-e Khosrow, *Historia Mathematica* **24** (1997), 193–196. The author presents three problems, and their solutions by means of indeterminate equations, from a newly discovered fragment of a lost mathematical work by the 11th-century Iranian poet, Nāser-e Khosrow. (DEZ) #24.4.13

BALDWIN, JAMES MARK. Logical Machine, *Modern Logic* **7** (1997), 78–80. A description and critical comparison of the logic machines of W. Stanley Jevons (1869), John Venn (1881), and Allan Marquand (1881). Reprinted from James Mark Baldwin, ed., *Dictionary of Philosophy and Psychology*, vol. III (New York, Macmillan, 1901; new edition with corrections, 1925), pp. 28–30. (JVR) #24.4.14

BERGGREN, J. L., AND THOMAS, R. S. D. *Euclid's Phaenomena. A Translation and Study of a Hellenistic Treatise in Spherical Astronomy*, Princeton: Garland, 1996, xii + 132 pp., $36. A translation of Euclid's *Phaenomena* concerning the problem of sunrise and sunset that follows the Greek text established by

Menge. A description of the type of spherical trigonometry that preceded Menelaus is also given. See the review by H. W. Guggenheimer in *Mathematical Reviews* **97a**:01006. (GSS) #24.4.15

BERGGREN, J. L. *See also* #24.4.51.

BÉZIAU, JEAN-YVES. *See* #24.4.38

BINGHAM, N. H. *See* #24.4.98.

BOARDMAN, J. M. *See* #24.4.83.

BÖNKER-VALLON, ANGELIKA. *Metaphysik und Mathematik bei Giordano Bruno*, Berlin: Akademie Verlag, 1995, xii + 281 pp., DM 120. Detailed systematic and historical evaluation of Bruno's ideas on the relation between metaphysics and mathematics. See the review by Eberhard Knobloch in *Mathematical Reviews* **97e**:01006. (CJ) #24.4.16

BOS, HENK J. M. Johann Bernoulli on Exponential Curves, ca. 1695: Innovations and Habituation in the Transition from Explicit Constructions to Implicit Functions, *Nieuw Archief voor Wiskunde* **14** (1996), 1–19. Shows how Johann Bernoulli extended infinitesimal calculus (differentiation, integration) to handle exponential curves. This work habituated the mathematical public to more general expressions and paved the way for the analytic approach of Euler. See the review by Victor J. Katz in *Mathematical Reviews* **97e:**01007. (CJ) #24.4.17

BOWEN, ALAN C, AND GOLDSTEIN, BERNARD R. Geminus and the Concept of Mean Motion in Greco-Latin Astronomy, *Archive for History of Exact Sciences* **50** (1996), 157–185. Discusses work of the pre-Ptolemaic astronomer, Geminus, on lunar motion. (LH) #24.4.18

BOWEN, ALAN C. *See also* #24.4.75.

BRACK-BERNSEN, LIS. Olaf Schmidt (1913–1996), *Historia Mathematica* **24** (1997), 131–134. Obituary of the historian of mathematics Olaf Schmidt, who specialized in ancient civilizations. (DEZ) #24.4.19

BRU, BERNARD. Condorcet, mathématique sociale et vérité, *Mathématiques informatique et sciences humaines* **128** (1994), 5–14. Explores reasons why Condorcet's attempts to expand the scope of mathematics beyond the boundaries of natural science have been largely ignored. The author discusses d'Alembert's friendship with Condorcet, revealing d'Alembert's views on Condorcet's mathematical capabilities and work habits. See the review by Michael Otte in *Mathematical Reviews* **97b**:01009. (EAM) #24.4.20

BRUHN, G. *See* #24.4.79.

BRUNNER, N. 75 Years of Independence Proofs by Fraenkel–Mostowski Permutation Models, *Mathematica Japonica* **43** (1996), 177–199. A survey of the technique, applications, and history of independence proofs in set theory by means of permutation models. The history of the axiom of choice and a survey of the interrelations between various choice principles in ZFA are discussed. Also included is a presentation of the technique of Fraenkel–Mostowski permutation models with some proofs. See the review by Yehuda Rav in *Mathematical Reviews* **97a**:01037. (GSS) $24.4.21

BUCHSBAUM, DAVID; RINGEL, C. M.; AND REITEN, IDUN. Maurice Auslander 1926–1994, in Raymundo Bautista, Roberto Martinez-Villa, and José Antonio de la Peña, eds., *Representation Theory of Algebras*, Providence: American Mathematical Society, 1996, pp. 1–15. Obituary of Maurice Auslander, including a survey of his early work and his results on the representation theory of Artin algebras. (GSS) #24.4.22

BUENO, OTÁVIO, A. S. *See* #24.4.38.

BULDT, BERND. *See* #24.4.74.

BURTON, DAVID M. *History of Mathematics: An Introduction, Third Edition*, Dubuque, IA: Wm. C.

Brown, 1995, xiii + 698 pp., hardbound, $74.60. The new edition of this textbook contains several changes and a new chapter on 20th-century mathematicians. (DEZ) #24.4.23

BUTS, O. M. A.-B. P. Psheborskii and His Contribution to the Development of the Theory of Best Approximation [in Ukrainian], in A. N. Bogolyubov, ed., *Achievements in the Development of the Mathematical Sciences* [in Ukrainian], Kiev: Natsionalna Akademiya Nauk Ukraini, 1994, pp. 44–58. Discusses Psheborskii's life and mathematical works, with particular attention to his contributions to the theory of best polynomial approximation. See the review by Valeri Kaliaguine in *Mathematical Reviews* **97b**:01013. (EAM) #24.4.24

CAMPOS, ALBERTO. Descartes, investigador matemático afortunado [Descartes, Fortunate Mathematics Researcher], in #24.4.2, pp. 11–24. The author shows how Descartes's solution to Pappus's celebrated problem on the curve satisfied by certain points determined by *n* segments in the plane, related between them by certain angle and ratio conditions, is close to the ''Rules for the direction of the mind.'' (VA) #24.4.25

CARDONA SUÁREZ, CARLOS ALBERTO. De la metafísica a la física en el programa cartesiano [From Metaphysics to Physics in the Cartesian Program], in #24.4.2, pp. 25–39. The metaphysical grounds of Cartesian physics are analyzed, expecially the role played by the notion of extension in Descartes's physical and metaphysical writings. (VA) #24.4.26

CASULLERAS, JOSEP, AND SAMSÓ-MOYA, JULIO. *De Bagdad a Barcelona. Estudios sobre historia de las ciencias exactas en el mundo islámico en honor del profesor Juan Vernet* [*From Baghdad to Barcelona. Studies on the History of Exact Sciences in the Islamic World in Honor of Professor Juan Vernet*], Barcelona: Anuari de Filosofía (Barcelona: Univ. de Barcelona), 2 vols., 830 pp. See the review by Elena Ausejo in *LLULL* **19** (1996), 601–602. The papers will be abstracted separately. (VA) #24.4.27

CHAND, RAMESH. *See* #24.4.161.

CHEMLA, KARINE. Algebraic Equations East and West until the Middle Ages, in K. Hashimoto, C. Jami, and L. Skar, eds., *East Asian Science: Tradition and Beyond: Papers from the Seventh International Conference on the History of Science in East Asia, Kyoto, 2–7 August 1993*, Osaka: Kansai Univ. Press, 1995, pp. 83–89. This paper suggests an historical framework for conceiving the history of algebraic equations at the international level by contrasting traditions from Babylonian, Chinese, and Greek sources with Arabic sources. (DEZ) #24.4.28

CHEMLA, KARINE. Histoire des sciences et matérialité des textes: Proposition d'enquête, *Enquête* **1** (1995), 167–180. This paper argues that the history of science develops various kinds of exchanges depending on the context in which texts are written. (DEZ) #24.4.29

CHEMLA, KARINE. Que signifie l'expression 'mathématiques europeennes' vue de Chine?, in C. Goldstein, J. Gray, and J. Ritter, eds., *L'Europe mathématique: Mythes, histoires, identites*, Paris: Éditions de la Maison des sciences de l'homme, 1996, pp. 221–245. It is a widely held opinion that the introduction of European mathematics into China by Jesuit missionaries in the 17th century occurred when indigenous mathematics had completely disappeared. This paper shows how the *tongwen suanshi* was an adaptation in which indigenous mathematics was added to the original text. (KC) #24.4.30

CHEMLA, KARINE. Relations between Procedure and Demonstration: Measuring the Circle in the *Nine Chapters on Mathematical Procedures* and Their Commentary by Liu Hui (3rd century), in Hans Niels Jahnke, Norbert Knoche, and Michael Otte, eds., *History of Mathematics and Education: Ideas and Experiences*, Göttingen/Zürich: Vandenhoeck & Ruprecht, 1996, pp. 69–112. An analysis of the commentary by Liu Hui on the procedure for computing the area of a circle in *Nine Chapters*. The emphasis is on the relationship between procedure and proof. (DEZ) #24.4.31

CHEMLA, KARINE, AND LACKNER, M., eds. Disposer pour dire, placer pour penser, situer pour agir: Pratiques de la position en Chine; Paris: Presses universitaires de Vincennes, 1996, 192 pp. A collection

of papers investigating various uses of position (*wei*) in Chinese works on different subjects and dating from various periods. Themes include geography (V. Dorofeeva-Lichtman), divination (M. Kalinowski), mathematics (K. Chemla), textual exegesis (M. Lackner), ritual (M. Bastid), and philosophy (Cheng Chungying). In a concluding article, G. Lloyd compares Chinese and Greek sources in this respect. (DEZ) #24.4.32

CIESIELSKI, KRZYSZTOF. *See* #24.4.95.

CIFOLETTI, GIOVANNA CLEONICE. *La méthode de Fermat: Son statut et sa diffusion*, Paris: Belin, 1990, 243 pp., 60 FF. Most of this book investigates the contemporary role of Fermat's method of maxima and minima. The concluding chapter discusses the influence of this analytical method on differential geometry in the 1960s and 1970s. See the book review by Antoni Malet in *Historia Mathematica* **24** (1997), 208–209. (DEZ) #24.4.33

CLOSS, M. P. *See* #24.4.12.

COBOS BUENO, JOSÉ. *Fondo de libros de matemáticas existentes en Extremadura desde el siglo XVI al XX* (*1930*) [*Mathematics Books in Extremaduran Libraries from the 16th to the 20th Century* (*1930*)], Cáceres: Univ. de Extremadura, 1991, 181 pp. See the review by Mariano Hormigón in *LLULL* **19** (1996), 595–596. (VA) #24.4.34

COHN, PAUL M. Shimshon Avraham Amitsur (1921–1994), *Bulletin of the London Mathematical Society* **28** (1996), 433–439. An obituary of the Israeli algebraist, S. A. Amitsur. There is a list of his 106 published papers and a photo of Amitsur with Nathan Jacobson. (JA) #24.4.35

COLEMAN, A. J. *See* #24.4.182.

CORREIA, MANUEL ANTONIO. Theory of Variations and the Art of Complications of the Sciences in the *Dissertatio de arte combinatoria* (1666) of G. W. Leibniz [in Spanish], *Theoria* **10** (1995), 141–153. Provides useful information on Leibniz's essay, discusses the historical origins of the theory of variations, and the mathematics of variations and applications to ''inventive logic.'' See the review by Ignacio Angelelli in *Mathematical Reviews* **97a**:01023. (GSS) #24.4.36

CORRY, LEO. Paradigms and Paradigmatic Change in the History of Mathematics, in #24.4.10, pp. 169–191. The debate on revolutions in mathematics, from a critical perspective and focused on the concept of paradigm, is assessed. The author concludes that alternative definitions [interpretations] of the concept of paradigm may have interesting consequences of their own. (VA) #24.4.37

CORRY, LEO. *See also* #24.4.68.

CREPEL, PIERRE. *See* #24.4.156.

DA COSTA, NEWTON C. A.; BÉZIAU, JEAN-YVES; AND BUENO, OTÁVIO, A. S. Aspects of Paraconsistent Logic, *Bulletin of the IGPL* **3** (1995), 597–614. An historical discussion and expository survey of paraconsistent logic emphasizing the roles played by Łukasiewicz, Vasilev, Jaśkowski, da Costa, and Béziau. See also #24.1.48. (IA) #24.4.38

DALMEDICO, AMY DAHAN. Le difficile héritage de Henri Poincaré en systèmes dynamiques, in Jean-Louis Greffe, Gerhard Heinzmann, and Kuno Lorentz, eds., *Sonderdruck aus Henri Poincaré: Science et philosophie*, Berlin: Akademie Verlag, 1996, pp. 13–33, 577. A summary of the key ideas in Poincaré's dynamics, beginning in 1881. Though Poincaré had no school of followers his influence was great, as the author illustrates in examples from Lyapunov and other Russians to G. D. Birkhoff. See the review by J. S. Joel in *Mathematical Reviews* **97c**:01024. (ACL) #24.4.39

DALMEDICO, AMY DAHAN. L'essor des mathématiques appliquées aux Etats-Unis: L'impact de la seconde guerre mondiale, *Revue d'histoire des mathématiques* **2** (1996), 149–213. An examination of the role played by World War II in the development of applied mathematics in the U.S. John von Neumann is viewed as an example of a new persona for mathematicians and the Courant Institute as a new kind of center of research. The last part of the paper addresses the question why applied

mathematics retained second-class citizenship in the international community outside the U.S. until the 1970s. (DEZ) #24.4.40

DAUBEN, JOSEPH W. Charles S. Peirce, Evolutionary Pragmatism and the History of Science, *Centaurus* **38** (1996), 22–82. This is a major reassessment of Peirce "as a mathematician, as a historian of science and as a philosopher of science." There is a discussion of Peirce's conception of the infinite and of continuity, and of the role that Peirce thought logic should play in mathematics. See the review by Jaime Nubiola in *Mathematical Reviews* **96m**:01011. (JA) #24.4.41

DAUBEN, JOSEPH W. Paradigms and Proofs: How Revolutions Transform Mathematics, in #24.4.10, pp. 117–148. From the author's introduction: "Is there, in fact, any helpful way to distinguish revolutions in mathematics without reaching one of the two extremes whereby we either have to deny that they ever occur, or are left with the possibility that almost every change from the status quo is a revolution?" (VA) #24.4.42

DE, MO, AND ZHENHUA, JIANG. The Recent Chinese and Mongolian Translations of Euclid's *Elements, Historia Mathematica* **24** (1997), 197–199. Report of the results of a coordination group that translated Euclid's *Elements* into Mongolian and into modern Chinese, and then sponsored symposia to study them. *See also* #24.4.125. (DEZ) #24.4.43

DEAKIN, MICHAEL A. B. The Origins of Our Number–Words, *Australian Mathematical Society Gazette* **23** (1996), 50–66. A linguistic analysis of words and terms associated with number concepts. (DEZ) #24.4.44

DEAKIN, MICHAEL A. B. *See also* #24.4.60.

DEAR, PETER. *Discipline & Experience: The Mathematical Way in the Scientific Revolution. Science and its Conceptual Foundations*, Chicago: Univ. of Chicago Press, 1995, xiv + 290 pp., hardbound $60, paperbound $24. See the detailed review by Jens Høyrup in *Mathematical Reviews* **97b**:01007. (EAM) #24.4.45

DELL'AGLIO, LUCA. On the Genesis of the Concept of Covariant Differentiation, *Revue d'histoire des mathématiques* **2** (1996), 215–264. The origin of covariant differentiation is traced to the work of Gregorio Ricci-Curbastro in the last quarter of the 19th century. (DEZ) #24.4.46

DE LORENZO, JAVIER. The Mathematical Work-Mode and Its Styles, in #24.4.10, pp. 215–231. The author proposes to construct a theory or a philosophy of mathematics which takes into account the styles in which it is manifested in mathematical work-modes as existing around the world, as a human production. (VA) #24.4.47

DEMIDOV, SERGEI S. Where Is the Meeting Place of Philosophical Influence on Mathematics? in #24.4.10, pp. 283–288. From the author's introduction: The question in the title, "one of the most important questions existing in the history of mathematics, is [also] one of the most complicated.... Naturally the answer to such a general question cannot be single-valued. In the different historical periods, in different cultures and in the different situations, for the different mathematical disciplines the relationship between philosophy and mathematics has its special features." The author restricts attention to "the birth of the Moscow school of the theory of functions of a real variable." (VA) #24.4.48

DEMIDOV, SERGEI S. *See also* #24.4.186.

DE MORA, MARY SOL. La mathématique barroque: La société du XVI^{e} et XVII^{e} siècles et les influences des idées extra-mathématiques sur la naissance et développement d'une mathématique nouvelle, aussi bien pure qu'appliquée, in #24.4.10, pp. 311–324. A discussion of how customs and even fashions have deeply influenced the development of science. (VA) #24.4.49

DESLAURIERS, GILLES, AND DUBUC, SERGE. Le Calcul de la racine cubique selon Héron, *Elemente der Mathematik* **15** (1996), 28–34. The authors call attention to a method developed by Heron of Alexandria

for approximating the cube root of a positive number. It is compared with an interpolation attributed to Hermite. (DWB) #24.4.50

De Young, Gregg. Ibn al-Sarī on ex aequali Ratios: His Critique of Ibn al-Haytham and His Attempt to Improve the Parallelism between Books V and VII of Euclid's *Elements, Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften* **9** (1994), 99–152, 10 (Arabic pagination) (1995). Medieval Arabic scholars saw a problem in the different ways Euclid's *Elements* handled direct proportion and perturbed proportion for geometrical magnitudes. This paper presents the 13th-century Arabic text, with English translation, of a critic of ibn al-Haytham's solutions to these problems. Reviewed by J. L. Berggren in *Mathematical Reviews* **97c**:01011. (ACL) #24.4.51

Díaz, Luis Aurelio. Conocimiento y libertad [Knowledge and Freedom], in #24.4.2, pp. 41–50. The author examines the links between Cartesian hyperbolic doubt, the clean separation between theory and practice, and metaphysical doubt. (VA) #24.4.52

Djebbar, Ahmed. La rédaction de *L'istikmāl* d'al-Mu'taman (XI^{e} s.) par ibn Sartāq, un mathématicien des XIII^{e}–XIV^{e} siècles, *Historia Mathematica* **24** (1997), 185–192. A study of a 14th-century manuscript by Ibn Sartāq containing a complete edition of the *Kitāb al-Istikmāl* [*The Book of Perfection*] by the Andalusian mathematician, al-Mu'taman ibn Hūd (11th century). (DEZ) #24.4.53

Dold-Samplonius, Yvonne. Bartel Leendert van der Waerden (1903–1996), *Historia Mathematica* **24** (1997), 125–130. Obituary of B. L. van der Waerden that discusses parts of his life and his contributions to algebra, algebraic geometry, and the history of mathematics. (DEZ) #24.4.54

Dold-Samplonius, Yvonne. *See also* #24.4.65.

Dorier, Jean-Luc. Genèse des premiers espaces vectoriels de fonctions, *Revue d'histoire des mathématiques* **2** (1996), 265–307. A survey of the rise and adoption of vector spaces of functions into the field of analysis from 1880 to 1932, emphasizing the contributions of Fredholm and Hilbert. (DEZ) #24.4.55

Drucker, Tom. Cranks and Professional Advancement: The Early Years of the Calculus, *Bulletin CSHPM/SCHPM* **20** (1997), 6–7, 22. A brief note on how Nicholas Bernoulli and John Craig (d. 1731) used calculus to advance their legal and religious careers, respectively. (DEZ) #24.4.56

Dubuc, Serge. *See* #24.4.50.

Duchesneau, François. *La dynamique de Leibniz*, Paris: Vrin, 1994, 367 pp., 195 FF. See the book review by Christiane Vilain in *Historia Mathematica* **24** (1997), 206–207. (DEZ) #24.4.57

Dugac, Pierre. *Jean Dieudonné: Mathématicien complet. Plus de lumière*, Sceaux: Éditions Jacques Gabay, 1995, iv + 157 pp., 198 F. Not a biography but more of "an extended obituary" of Dieudonné (1906–1992). There are accounts of Dieudonné's work in mathematics per se, his contributions to the history of mathematics, a list of his 200 publications, and 10 pages of photos. See the review by Jeremy Gray in *Mathematical Reviews* **96m**:01021. (JA) #24.4.58

Dutka, Jacques. On the Summation of Some Divergent Series of Euler and the Zeta Functions, *Archive for History of Exact Sciences* **50** (1996), 187–200. Discusses Euler's assignment of numerical values to certain divergent series connected to the Riemann zeta function. Also describes work on related series by Swiss mathematician, Hermann Kinkelin (1832–1913). (LH) #24.4.59

Dzielska, Maria. *Hypatia of Alexandria*, Cambridge: Harvard Univ. Press, 1995, viii + 157 pp., $29.95. See the review by Michael Deakin in the *American Mathematical Monthly* **103** (1996), 83–87. The reviewer concludes that "the failure of Dzielska's book to come to terms with mathematical and scientific matters is disappointing." (DEZ) #24.4.60

Edwards, D. A. Alan John Ellis (1940–1992), *Bulletin of the London Mathematical Society* **28** (1996), 197–207. Obituary of A. J. Ellis, whose professional career began at University College Swansea. He became head of the Department of Mathematics at the University of Hong Kong. His mathematical

work was in functional analysis. There are lists of Ellis's four books, 36 papers, and three Ph.D. students, and there is a photo. (JA) \$24.4.61

EELSALU, H. *See* #24.4.84.

EISENBUD, DAVID; GREEN, MARK; AND HARRIS, JOE. Cayley–Bacharach Theorems and Conjectures, *Bulletin of the American Mathematical Society* **33** (1996), 295–324. An historical survey of a theorem in algebraic geometry from its proof by Pappus of Alexandria to 20th-century developments, including results due to Pascal, Chasles, Cayley, Bacharach, and Max Noether. ''Arthur Cayley, probably the most distinguished mathematician in this story, does not play a glorious role in it'' (p. 303). (DEZ) #24.4.62

ELIAS, P. *See* #24.4.91.

ERLICHSON, HERMAN. Hooke's September 1685 Ellipse Vertices Construction and Newton's Instantaneous Impulse Construction, *Historia Mathematica* **24** (1997), 167–184. The author enters the Hooke–Newton priority dispute by providing an interpretation of a 1685 mauscript by Robert Hooke that rejects the claim that Hooke had developed a quantitative theory of centripetal force motion. (DEZ) #24.4.63

ESPAÑOL GONZÁLEZ, LUIS. Julio Rey Pastor en la *Revista de la Sociedad matemática española* (1911–1917), *LLULL* **19** (1996), 382–424. In chronological order the author collects and reviews the publications of Julio Rey Pastor in the journal, *Revista de la Sociedad matemática española*. (VA) #24.4.64

FARÈS, NICOLAS. Aspects analytiques dans la mathématique de Sharaf al-Dīn al-Tūsī, *Historia Scientiarum* **5** (1995), 39–55. An explanation of the methods and motivation in the *Algebra* of the 12th-century Islamic mathematician, Sharaf al-Dīn al-Tūsī. See the review by Y. Dold-Samplonius in *Mathematical Reviews* **97c**:01009, which concludes, ''The aim of the present paper appears to be to prove that Hogendijk is wrong. In my opinion, the author does not succeed.'' (DEZ) #24.4.65

FARÈS, NICOLAS. Le calcul du maximum et la ''dérivée'' selon Sharaf al-Dīn al-Tūsī, *Arabic Sciences and Philosophy: A Historical Journal* **5** (1995), 140, 142, 219–237. An analysis of al-Tūsī's implicit use of a differentiation procedure for calculating maxima of cubic functions in order to determine when an associated cubic equation has a real positive solution. See the review by Julio Samsó-Moya in *Mathematical Reviews* **97e**:01002. (CJ) #24.4.66

FAUVEL, JOHN; FLOOD, RAYMOND; SHORTLAND, MICHAEL; AND WILSON, ROBIN. *Newtons Werk*, Basel: Birkhäuser, 1993, 322 pp., \$59. A translation into German of *Let Newton Be!* (New York: Oxford Univ. Press, 1988). (DEZ) #24.4.67

FERREIRÓS DOMÍNGUEZ, JOSÉ. *El nacimiento de la teoría de conjuntos, 1854–1908* [*The Birth of Set Theory, 1854–1908*], Madrid: Ediciones de la Universidad autónoma de Madrid, 394 pp. See the review by Leo Corry in *LLULL* **19** (1996), 617–620. (VA) #24.4.68

FLOOD, RAYMOND. *See* #24.4.67.

FRASER, CRAIG G. *See* #24.4.173.

FREI-IMFELD, G. *See* #24.4.185.

GALUZZI, MASSIMO. *See* #24.4.94.

GANE, POLICARP. Anniversaries in 1995 [in Romanian], *Caiet de informare matematică* **34** (1995), 1012–1013. Brief mention of the contributions of Romanian mathematicians, Octav Mayer (1895–1966), Solomon Marcus (b. 1925), and Florentin Smarandache (b. 1954). (IE) #24.4.69

GANE, POLICARP. The 100-Year Anniversary of *La Gazeta matematică* [in Romanian], *Caiet de informare matematică* **34** (1995), 1014–1016. Brief vitae of the mathematicians and engineers who established the Romanian journal, *La Gazeta matematică*, in 1895 and those who have served in editorial positions since then. (IE) #24.4.70

GARCIADIEGO, ALEJANDRO. History of Mathematics in Mexico: In Search of the "Boston Connection," *Bulletin CSHPM/SCHPM* **20** (1997), 4–5. The author poses numerous questions for a project to investigate the influence of American mathematicians on the development of professional mathematics in Mexico from 1920 to 1940. (DEZ) #24.4.71

GASSER, JAMES. *See* #24.4.93.

GATTO, ROMANO. *Tra scienza e immaginazione; Le matematiche presso il collegio gesuitico napoletano* (*1552–1670 ca.*), Florence: Olschki, 1994, 392 pp. An inquiry into the Jesuit college at Naples, including the genesis of mathematical teaching, the condemnation of heliocentrism, mathematical production during the post-Copernican generation, and the question of the structure of matter. See the book review by Antonella Romano in *Historia Mathematica* **24** (1997), 203–205. (DEZ) #24.4.72

GLASNER, RUTH. The Hebrew Version of *De caelo et mundo* Attributed to Ibn Sīnā, *Arabic Sciences and Philosophy: A Historical Journal* **6** (1996), 4, 6–7, 89–112. Demonstrates that the 13th-century Hebrew text *On the Heavens and the World* is not a translation of work by Ibn Sīnā, but instead a new work based on a Latin version of the text, with additional material adapted from various contemporary Hebrew and Arabic sources. See the review by Victor J. Katz in *Mathematical Reviews* **97b**:01006. (EAM) #24.4.73

GÖDEL, KURT. *On Formally Undecidable Propositions of Principia Mathematica and Related Systems*, New York: Dover, 1992, viii + 72 pp., $4.94. An unabridged and unaltered reprint of the 1962 Basic Books edition containing a translation into English of Gödel's classic 1931 paper, "Über formal unentscheidbare Sätze der *Principia Mathematica* und verwandter Systeme I." See the extended review by Bernd Buldt in *Modern Logic* **7** (1997), 90–99. (DEZ) #24.4.74

GOLDSTEIN, BERNARD R., AND BOWEN, ALAN C. Pliny and Hipparchus's 600-Year Cycle, *Journal of the History of Astronomy* **26** (2) (1995), 155–158. An interpretation of a short passage by Pliny (1st century A. D.) about eclipses. (DEZ) #24.4.75

GOLDSTEIN, BERNARD R. *See also* #24.4.18.

GOODEARL, K. R. *See* #24.4.8.

GOW, ROD. Some Galway Professors of Mathematics and Natural Philosophy, *Irish Mathematical Society Bulletin* **35** (1995), 42–48. A collection of accounts of the scientific contributions of the holders of the chairs of mathematics and of natural philosophy at Queen's College, Calway, from 1849 to approximately 1950. See the review by James J. Tattersall in *Mathematical Reviews* **96m**:01022. (JA) #24.4.76

GRATTAN-GUINNESS, IVOR. Normal Mathematics and Its Histor(iograph)y: The Tenacity of Algebraic Styles, in #24.4.10, pp. 203–213. From the author's introduction: "My purpose in this paper is to discuss a corresponding connection between normal mathematics and styles which help to drive it; I choose for special reference one collection which I call algebraic." (VA) #24.4.77

GRAY, JEREMY. *See* #24.4.1 and #24.4.58.

GREEN, MARK. *See* #24.4.62.

GROPP, HARALD. Why Is Graph Theory Called Graph Theory?, in Peter Schreiber, ed., *Werk und Wirkung: Proceedings of the International Conference on the Occasion of the 150th Anniversary of the First Publication of the Lineale Ausdehnungslehre*, Greifswald: Ernst-Moritz-Arndt-Universität, 1995, pp. 37–46. A description of how the term graph in modern graph theory began with Grassmann's indirect influence on Clifford. Contributions by Cayley and Sylvester are also cited. (DEZ) #24.4.78

GROSCHE, J.; GÜNTSCH, F. R.; HELLWIG, G.; JESSEN, E.; TÖPFER, H.-J.; WENDLAND, W.; AND BRUHN, G. Wolfgang Haack zum Gedachtnis [Wolfgang Haack in Memoriam], *Jahresbericht der deutschen Mathematiker-Vereinigung* **98** (1996), 1–11. An obituary of Wolfgang Haack (1902–1994), who worked

in differential geometry, gas dynamics, and partial differential equations. Also included are a photo, a list of his doctoral students, and his scientific bibliography. (DEZ) #24.4.79

GUGGENHEIMER, H. W. *See* #24.4.15.

GÜNTSCH, F. R. *See* #24.4.79.

HALLDÉN, SÖREN. Autobiographical Notes, *Theoria* **59** (1993), 3–17. A discussion of academic life in Sweden centered around the author's career. (DEZ) #24.4.80

HALLYN, F. Kepler, Snell and the Law of Refraction [in Dutch], *Mededelingen van de Koninlijke Academie voor Weten schappen, Letteren en Schone Kunsten van België* **56** (1994), 119–134. It is claimed that Kepler was never able to grasp the law of refraction because of certain limitations in his intuition and imagination. Snell, on the other hand, had "no qualms about mixing the animistic with the Aristotelian," and this is what accounts for his successful struggle to discover this law. See the review by Zeno G. Swijtink in *Mathematical Reviews* **96m**:01008. (JA) #24.4.81

HARMAN, PETER M. *See* #24.4.142 and #24.4.184.

HARRIS, JOE. *See* #24.4.62.

HAYASHI, TAKAO. Calculations of the Surface of a Sphere in India, *The Science and Engineering Review of Doshisha University* **37**(1997), 194–238. A survey of results between the years 500 and 1600, with editions and translations of selected unpublished Sanskrit sources. (JPH) #24.4.82

HAYASHI, TAKAO. *See also* #24.4.100.

HELLWIG, G. *See* #24.4.79.

HIRSCH, GUY. Selected Works of Guy Hirsch [in French], *Bulletin of the Belgian Mathematical Society. Simon Stevin* 1995, Supplement, xvi + 176 pp. Reprints of 17 papers, mostly on fibrations and secondary cohomology operations. Includes a brief biography and a bibliography, and an introduction by Yves Felix. See the review by J. M. Boardman in *Mathematical Reviews* **97e**:01022. (CJ) #24.4.83

HOGENDIJK, JAN P. B. L. van der Waerden's Detective Work in Ancient and Medieval Mathematical Astronomy, *Nieuw Archief voor Wiskunde* **12** (1994), 145–158. See the review by H. Eelsalu in *Mathematical Reviews* **96m**:01023. (JA) #24.4.84

HORMIGÓN, MARIANO. La ciencia, su historia, las revistas de historia de la ciencia, la censura previa y la libertad de expresión [Science, Its History, the Journals of History of Science, Previous Censorship, and Freedom of Speech], *LLULL* **19** (1996), 551–560. Peculiar and interesting opinions that warrant a careful and attentive reading. (VA) #24.4.85

HORMIGÓN, MARIANO. Paradigms and Mathematics: A Theoretical Model for Research in the History of Mathematics, in #24.4.10, pp. 1–113. In this lengthy essay, after discussing the hard problem of mathematical paradigms à la Kuhn, the author establishes three mathematical paradigms: Greek, Lagrangian, and Hilbertian. In the last part of the essay he proposes to view the history of mathematics from a broad perspective, one not centered on the existence of geniuses. (VA) #24.4.86

HORMIGÓN, MARIANO. *See also* #24.4.10 and #24.4.34.

HOUZEL, CHRISTIAN. Sharaf al-Dīn al-Ṭūsī et le polygône de Newton, *Arabic Sciences and Philosophy: A Historical Journal* **5** (1995), 140, 142–143, 239–262. A discussion of al-Ṭūsī's geometrical and algebraic techniques for solving quadratic and cubic equations. See the review by Julio Samsó-Moya in *Mathematical Reviews* **97e**:01003. (CJ) #24.4.87

HØYRUP, JENS. *See* #24.4.45.

HUGHES, BARNABAS. Indian Roots for Latin Problems? *Gaṇita-Bhāratī* **17** (1995), 1–9. Discusses an 11th-century Latin collection of mathematics problems and solutions, noting its possible Indian origins. See the review by A. I. Volodarskii in *Mathematical Reviews* **97e**:01005. (CJ) #24.4.88

HUGHES, BARNABAS. Problem-Solving by Ayyūb al-Baṣrī, An Early Algebraist, *Journal for the History of Arabic Science* **10** (1994), 31–39, 150. Analysis of a Latin tract containing a set of recreational problems solved by the rule of false position and the method of *regula infusa*, which changes the coefficient of an unknown to unity. Based on Arabic work predating al-Khowarizmi. See the review by Julio Samsó-Moya in *Mathematical Reviews* **97e**:01004. (CJ) #24.4.89

HUISGEN-ZIMMERMANN, B. *See* #24.4.8.

IONESCU-PALLAS, NICHOLA. *See* #24.4.164.

JAIN, L. C., AND PRABHA JAIN, KUMARI. Certain Special Features on the Ancient Jaina Calendar, *Indian Journal of History of Science* **30** (1995), 103–131. A description of certain methods found in the *Surya Prajnapti*, the *Candra Prajnapti*, and the *Trilokasara* "for finding the various types of the positions of the sun and the moon in relation to the stars, etc." See *Mathematical Reviews* **96m**:01004. (JA) #24.4.90

JERISON, DAVID; SINGER, ISADORE, M.; AND STROOCK, DANIEL W., eds. *The Legacy of Norbert Wiener: A Centennial Symposium*, Providence: American Mathematical Society, 1997, 405 pp., hardbound, $80. A collection of lectures delivered at an MIT symposium to commemorate the 100th anniversary of the birth of Norbert Wiener. The first section of the volume, called "Biographical and Historical Remarks," contains the following papers: D. Jerison and D. W. Stroock, "Norbert Wiener"; P. Elias, "The Rise and Fall of Cybernetics in the US and the USSR"; D. Struik, "Reminiscences of Norbert Wiener"; and P. A. Samuelson, "Some Memories of Norbert Wiener." (DEZ) #24.4.91

JESSEN, E. *See* #24.4.79.

JHA, PARMESHWAR. Indian Mathematics in the Dark Age, *Gaṇita-Bhāratī* **17** (1995), 75–79. An examination of religious and canonical works show that the period from the 5th century B. C. to the 5th century A. D. laid the foundation for the development of Indian mathematics. (DEZ) #24.4.92

JOEL, J. S. *See* #24.4.39, #24.4.130, and #24.4.172.

JORAY, PIERRE. Port-Royal: Une logique des idées, *Travaux de logique* **9** (1993), 1–70. Examines the motivation for and significance of the development of the Port-Royal "logic of ideas." The author considers salient issues of the Port-Royal project, including the relationship of the facts of language to the categories of thought. See the review by James Gasser in *Mathematical Reviews* **97b**:01008. (EAM) #24.4.93

JULLIEN, VINCENT. *Descartes: La Géométrie de 1637*, Paris: Presses universitaires de France, 1996, 128 pp., 45 F. Puts Descartes's *Géométrie* in the broader context of his scientific and philosophical interests, and gives a succinct analysis of the essay itself. See the review by Massimo Galuzzi in *Mathematical Reviews* **97e**:01008. (CJ) #24.4.94

KAHANE, JEAN-PIERRE. An Evaluation of the Influence of the Polish Mathematical School in the Years 1918–1939 [in Polish], *Wiadomości Matematyczne* **31** (1995), 163–175. Personal reflections on the Polish school and their work, particularly Stefan Banach and Sygmunt Janiszewski. Reviewed by Krzysztof Ciesielski in *Mathematical Reviews* **97c**:01042. (ACL) #24.4.95

KALASHNIKOV, VLADIMIR. Obituary: Boris Vladimirovich Gnedenko, *Journal of Applied Probability* **33** (1996), 592–599. A brief outline of the work of the probabilist, B. V. Gnedenko (1912–1995). (DEZ) #24.4.96

KALIAGUINE, VALERI. *See* #24.4.24.

KAPLANSKY, IRVING. *Selected Papers and Other Writings*, New York: Springer-Verlag, 1995, xviii + 257 pp., $54. A selection of papers by I. Kaplansky and his afterthoughts on each. Previously unpublished short notes from Kaplansky's notebooks provide the historical circumstances and motivations for his

work, and the later development of the papers. See the review by Jaroslav Zemánek in *Mathematical Reviews* **97a**:01074. (GSS) #24.4.97

KATZ, VICTOR J. *See* #24.4.17 and #24.4.73.

KENDALL, D. G.; BINGHAM, N. H.; AND SONDHEIMER, E. H. Gerd Edzard Harry Reuter (1921–1992), *Bulletin of the London Mathematical Society* **27** (1995), 177–188. ''Primarily an analyst who liked to work on problems with an 'applied' flavour,'' Reuter contributed to several areas of probability theory, functional analysis, the study of asymptotics of differential equations, and the interactions between probability and the theory of semigroups. He was instrumental in preserving the Mathematical Institute at Oberwolfach and served as editor of the *Proceedings of the London Mathematical Society*. There are lists of his research students, papers, and books, and a photo. See the review by Frank Smithies in *Mathematical Reviews* **96m**:01025. (JA) #24.4.98

KENNEDY, E. S. *See* #24.4.101 and #24.4.107.

KHAN, M. S. *Tabaqāt al-Umam* of Qādi Sā^{c}id al-Andalusī (1029–1070 AD), *Indian Journal of History of Science* **30** (1995), 133–149. An outline of the life and times of the 11th-century mathematician, Qādi Sā^{c}id, that contains a critical study of his *Tabaqāt al-Umam* (Toledo, 1068 AD) (DEZ) #24.4.99

KHARE, H. C. *Proceedings of the National Workshop on Vedic Mathematics Held at the University of Rajasthan, Jaipur, March 25–28, 1988*, Delhi: Motilal Banarsidass Publishers, 1994, 139 pp., Rs. 50. A variety of opinions about Vedic mathematics in India. See the review by Takao Hayashi in *Mathematical Reviews* **96m**:01006. (DEZ) #24.4.100

KHODZHIEV, ILKHOMDZHON. Astronomy and Mathematics in Tajiki poetry [in Russian], in A. A. Gurshtein, ed., *On the Border of Cognition of the Universe*, Moscow: Yanus, 1994, pp. 331–351. A description of manuscript sources written in Persian concerning medieval mathematics. Perhaps interesting as an example of the popularization of mathematics. See the review by E. S. Kennedy in *Mathematical Reviews* **97a**:01014. (GSS) #24.4.101

KHVEDELIDZE, B., AND MANJAVIDZE, G. A Survey of N. I. Muskhelishvili's Scientific Heritage, in M. Balavadze, I. Kiguradze, and V. Kokilashvili, eds., *Continuum Mechanics and Related Problem of Analysis* (Tbilisi: Metsniereba, 1993), pp. 11–66. A survey of the work of N. I. Muskhelishvili on the mathematical theory of elasticity and singular integral equations with Cauchy kernels. See the review by Frank Smithies in *Mathematical Reviews* **97a**:01054. (GSS) #24.4.102

KILMISTER, C. W. George Frederick James Temple (1901–1992), *Bulletin of the London Mathematical Society* **27** (1995), 281–287. Temple contributed to the theory of general relativity and to several areas of analysis. During World War II he worked on problems of supersonic fluid flow and of vibrations. After being widowed, he became a monk at the Quarr Abbey on the Isle of Wright, and in 1983 he was ordained. There are lists of his 64 published papers and 7 books, and there is a photo. (JA) #24.4.103

KNOBLOCH, EBERHARD. *See* #24.4.16.

KNORR, WILBUR R. Pseudo-Euclidean Reflections in Ancient Optics: A Re-examination of Textual Issues Pertaining to the Euclidean *Optica* and *Catoptrica, Physis: Rivista internazionale di storia della scienza* **31** (1994), 1–45. Discusses two versions of Euclid's *Optica*. The author argues that the *Catoptrica* ascribed to Euclid but not generally accepted as his own work should indeed be attributed to Euclid, and the *Catoptrica* thought to be Archimedes' by Apuleius of Mardura was also Euclid's work. He also argues that certain optical material of Pappus of Alexandria was incorporated into the *Optica*, not taken by Pappus from the *Optica*. See the review by A. G. Molland in *Mathematical Reviews* **97a**:01009. (GSS) #24.4.104

KOETSIER, TEUN. Dirk Struik's Autumn 1994 Visit to Europe, *Nieuw Archief voor Wiskunde* **14** (1996), 167–176. The author adds introductory notes to Struik's account of his one-week visit to Europe to celebrate his 100th birthday. See also #22.2.85. (DEZ) #24.4.105

KREIN, MARK GRIGOREVICH. *Selected Works, I* [in Russian], Kiev: Akademie Nauk Ukrainy, 1993,

316 pp. The first of three volumes of selections from the works of the Ukrainian mathematician, M. G. Krein (1907–1989), including a biographical sketch by several of his colleagues. See the review by Frank Smithies in *Mathematical Reviews* **96m**:01030. (DEZ) #24.4.106

KUNITZSCH, PAUL. Abū Naṣr and Ḥabash on maṭāli^{c} al-samt, *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften* **9** (1994), 43–82. An exploration of the history of the astronomical concept of the "ascension of the azimuth." The Arabic texts, translations, and commentary of some works of Abū Naṣr are given. See the review by E. S. Kennedy in *Mathematical Reviews* **97a**:01015. (GSS) #24.4.107

LACKNER, M. *See* #24.4.32.

LASERNA, MARIO. Analytic Geometry, Experimental Science and Metaphysics in Descartes, in #24.4.2, pp. 51–92. The author aims to show how the mind attains true and certain knowledge of nature's laws through applying the mathematical experimental method, which for Descartes is "the cause of objective cognition as an effect." (VA) #24.4.108

LAWSON, JIMMIE D. The Earliest Semigroup Paper? *Semigroup Forum* **52** (1996), 55–60. The question in the title is answered with a 1826 work by Abel. (DEZ) #24.4.109

LE, CHARLES T. The Most Paradoxist Mathematician of the World: Florentin Smarandache, *Bulletin of Pure and Applied Sciences* **15** (1996), 81–100. An account of the paradoxical life of Florentin Smarandache. See also #23.4.94. (DEZ) #24.4.110

LEIBNIZ, G. W. *L'estime des apparences*, Paris: Librarie philosophique J. Vrin, 1995, 473 pp., 220 F. A collection of 21 manuscripts and excerpts from manuscripts (some reconstructed) of Leibniz on probability, games of chance, and life expectancy. Most are from the 1670s and 1680s, and each is translated into French, appropriately footnoted, and supplemented with footnotes. See the review by Zeno G. Swijtink in *Mathematical Reviews* **96m**:01009. (JA) #24.4.111

LEISER, ECKART. Mathematics in the History of Psychology, in #24.4.10, pp. 325–335. The author wishes to transmit the following two things: "Firstly there are not only the mathematical sciences which meet with problems on the occasion of their attempt to relate their history with the Kuhnian pattern of interpretation, because the same thing is happening and even in a more severe way with the social sciences and particularly with psychology. Secondly it is just mathematics which due to their very special role in the framework of psychology are contributing heavily to this distortion with regard to the Kuhnian system of reference." (VA) #24.4.112

LÓPEZ SÁNCHEZ, JUAN FRANCISCO. Astronomía, náutica y metereología en la España Ilustrada: La obra científica de Gabriel Ciscar (1760–1829) [Astronomy, Navigation, and Meteorology in the Spanish Enlightenment: The Scientific Work of Gabriel Ciscar (1760–1829)], Doctoral Dissertation, University of Murcia. An examination of the scientific activities of Gabriel Ciscar, who introduced the metric decimal system into Spain. See the extensive review in *LLULL* **19** (1996), 579–582. (VA) #24.4.115

LOZANOV, CHAVDAR. Scientific Revolutions, or New Scientific Fashions? in #24.4.10, pp. 233–241. The author asserts that "the existence of scientific revolutions is based on the unique capacity of mathematics to represent, in stark and incisive terms, the essential relationships between humankind and the natural world." (VA) #24.4.116

MAGENES, Enrico. Maria Cibrario Cinquini [in Italian], *Atti Accademia nazionale lincei: Rendiconti lincei* (9) *Supplemento* **5** (1994), 35–47 (1995). An obituary of Maria Cibrario (1905–1992), with an account of her mathematical work. A photo and the list of scientific publications are included. (DEZ) #24.4.117

MAHZARY, DJAHANGUIR R. Contraintes socio-culturelles et conversions philosophiques chez Descartes. Casualité vs. Causalité, in #24.4.2, pp. 111–113. From the author's abstract: This essay aims to demystify Descartes and, in spite of all appearances, to give him back his true image: that of the martyr he had to play patiently, after Galileo's condemnation. (VA) #24.4.118

MALET, ANTONI. *See* #24.4.33.

MALIK, MOHAMMAD ABDUL. A Note on the *Algebra* of Al-Khowarizmi, *Islam and the Modern Age* **26** (1995), 26–32. A description of the content of Al-Khowarizmi's book, *Algebra*, including a discussion of possible reasons why algebra was developed at that time. (DEZ) #24.4.119

MALIK, MOHAMMAD ABDUL. Mathematization of Invisible Motion: Galileo and the Beginning of Calculus, *Lonergan Review* **3** (1994), 86–90. The author asserts that Galileo's study of invisible motion marks the beginning of calculus. He investigates forerunners of this notion. (DEZ) #24.4.120

MANJAVIDZE, G. *See* #24.4.102.

MARCUS, SOLOMON. Mathematics and the Humanities: Irina Gorun (1953–1985), *Libertas Mathematica* **15** (1995), 233–236. A description of the work of Irina Gorun in computer science during her tragically brief career. Included in the discussion is her work on formal grammars and the study of structure in literature and poetry. See the review by R. Suzanne Zeitman in *Mathematical Reviews* **97a**:01059. (GSS) #24.4.121

MARCZEWSKI, EDWARD. *Collected Mathematical Papers*, Warsaw: Polish Academy of Sciences, 1996, xxxvii + 684 pp. Reproductions of most of the work in analysis, topology, and probability of ''one of the most distinguished Polish mathematicians,'' Edward Szpilrajn (1907–1976), who changed his name to Marczewski while hiding from Nazi persecution. (DEZ) #24.4.122

MARGOT, JEAN-PAUL. La creación de las verdades eternas y la *Fábula del Mundo* [The Creation of Eternal Truths and the *Fable of the World*], in #24.4.2, pp. 93–109. From the author's abstract: In the letter to Mersenne (April 15, 1630), the statement that the chain of all difficulties in physics without which Descartes could not show that it is impossible to prove one without proving all of them, rests, says the author, on the reflections contained in the 1629 *Treatise on Metaphysics*. Thus the Cartesian fundamentals of physics rest on metaphysical grounds, in particular on the creation of eternal truths. Indeed, the author believes that this doctrine lies in the heart of the articulation of Cartesian physics and metaphysics. (VA) #24.4.123

MARTINOVIĆ, IVICA. The Verses of Rajmund Kunić on Rugjer Bošković [in Croatian], *Anali Dubrovnik* **34** (1996), 151–184. An account of the elegies writted by the professor of mathematics at the Roman College, Rajmund Kunić, praising the accomplishments of his colleague, Rugjer Bošković. (DEZ) #24.4.124

MARTZLOFF, JEAN-CLAUDE. Note on the Recent Chinese and Mongolian Translation of Euclid's *Elements, Historia Mathematica* **24** (1997), 200–202. An overview of recent research into Chinese translations of Euclid's *Elements. See also* #24.4.43. (DEZ) #24.4.125

MENDELSON, E. *See* #24.4.160.

MEUSNIER, NORBERT. La passe de l'espérance: L'émergence d'une mathématique du probable au XVIIème siècle, *Mathématiques informatique et sciences humaines* **131** (1995), 5–28. The famous letters of 1654 between Fermat and Pascal on connections between certain games of chance and the probability calculus, and the publication of Christiaan Huygens's *De ratiociniis in ludo aleae*, were the two catalysts for the ''groundbreaking'' works in probability theory produced by Pierre Montmort, Jacob Bernoulli, and Abraham DeMoivre in the decade 1708–1718. See the review by Zeno G. Swijtink in *Mathematical Reviews* **96m**:01010. (JA) #24.4.126

MOLLAND, A. G. *See* #24.4.104.

MOORE, GREGORY H. Is Mathematical Logic a Part of Mathematics? *Historia Mathematica* **24** (1997), 210–212. A letter-to-the-editor charging that a book review by Jeremy Gray gave ''an extremely misleading impression of the relationship between mathematical logic and the rest of mathematics after 1930.'' (DEZ) #24.4.127

MORANDI, STEVEN J. *See* #24.4.12.

MORRIS, RICHARD. *Achilles in the Quantum Universe: The Definitive History of Infinity*, Philadelphia:

Henry Holt, 1997, 256 pp., $25. The subtitle is misleading. Instead, this popular account explains how infinities crop up in physics and astronomy. (DEZ) #24.4.128

MUIR, JANE. *Of Men and Numbers. The Story of the Great Mathematicians*, Mineola, NY: Dover, 1996, iv + 249 pp., paperbound, $7.95. A Dover reprint of this 1961 work tells stories of Pythagoras, Euclid, Archimedes, Cardano, Descartes, Pascal, Newton, Euler, Gauss, Lobachevskii, Galois, and Cantor. (DEZ) #24.4.129

NABONNAND, PHILIPPE. Henri Poincaré et le problème des géodésiques sur une surface convexe, in Jean-Louis Greffe, Gerhard Heinzmann, and Kuno Lorentz, eds., *Sonderdruck aus Henri Poincaré: Science et philosophie* (Berlin: Akademie Verlag, 1996), pp. 256–276. Morse considered Poincaré's 1905 work on closed geodesics on convex surfaces to be the beginning of global analysis and of Morse theory. In addition to discussing Poincaré's work, this paper gives a summary of other turn-of-the century work on the subject. Reviewed by J. S. Joel in *Mathematical Reviews* **97c**:01030. (ACL) #24.4.130.

NAVARRO LOIDI, JUAN. Les différents versions des *Éléments* d'Euclide publiées en espagnol aux XVI^{e}, XVII^{e} et XVIII^{e} siècles: Permanence ou changement, in #24.4.10, pp. 427–502. Using extant Spanish translations of Euclid's *Elements*, the author studies their characteristics and differences on certain themes, drawing conclusions about the teaching of mathematics during this period. He also studies a Spanish translation of Euclid's *Data*, inserted in the military treatise *Escuela de Palas* (1693). (VA) #24.4.131

NOVÝ, LUBOŠ. Les étapes ou les paradigmes des mathématiques? in #24.4.10, pp. 149–168. The author discusses the methodological importance of periodization in the history of mathematics. (VA) #24.4.132

NUBIOLA, JAIME. *See* #24.4.41.

OTÁVIO, A. S. *See* #24.4.38.

OTERO, MARIO H. Apuntes sobre el último Kuhn Notes on Kuhn's Last Period], *LLULL* **19** (1996), 509–523. The author describes and criticizes Thomas S. Kuhn's philosophical and historical work, centered on the concept of *lexikon* and an evolutionary interpretation of scientific development, in the period 1987–1993 based mainly on his paper, ''The Trouble with the Historical Philosophy of Science,'' Cambridge: Harvard Univ. Press. (VA) #24.4.133

OTERO, MARIO H. Case Studies as Paradigmatic Exemplars in the Historiography of Mathematics: Inconvenience of a Unified Theory of Radical Change in Mathematics, in #24.4.10, pp. 193–200. The author examines the *status artis* of revolution in mathematics. (VA) #24.4.134

OTTE, MICHAEL. *See* #24.4.20.

PAMBUCCIAN, VICTOR V. *See* #24.4.154.

PASCAL, BLAISE. Machine d'arithmétique, *Modern Logic* **7** (1997), 56–66. A letter by Pascal, published in 1645, in which he describes his calculating machine and makes recommendations for the development and improvement of such machines. The reply of Louis, King of France, is included. The French text is a public domain ''etext'' uploaded with permission from L'Association des bibliophiles universels, a non-profit organization in France. (JVR) #24.4.135

PATON, RAY. *Computing with Biological Metaphors*, London: Chapman and Hall, 1994. See the review by Pedro C. Marijuán in *LLULL* **19** (1996), 617–620. (VA) #24.4.136

PATY, MICHEL. *Mathesis universalis* e inteligibilidad en Descartes [*Mathesis universalis* and Intelligibility in Descartes], in #24.4.2, pp. 135–170. Author's abstract: The problem of intelligibility, at the heart of Cartesian philosophy, springs up for the first time in the *Rules for the Direction of the Mind*, written nine years before *The Discourse of the Method*. The *Rules* present themselves as the first movement into his deep thought on mathematics, and on the issue of the certainty of knowledge with respect to

subjectivity. The *Mathesis universalis* summarizes, so to speak, his philosophy of knowledge in its essential part. (VA) #24.4.137

PEIRCE, BENJAMIN. A New System of Binary Arithmetic, by Benjamin Peirce, Consulting Geometer, United States Coast Survey, *Modern Logic* **7** (1997), 67–70. The letter in which Peirce proposed his notation for binary arithmetic. Reprinted from the *Report of the Superintendent of the Coast Survey* (1876), 81–82. (JVR) #24.4.138

PEIRCE, CHARLES S. Logical Machines, *Modern Logic* **7** (1997), 71–77. Discussion of the logic machines of W. Stanley Jevons (1869) and Allan Marquand (1881). The author asserts that every ''reasoning machine'' has two ''inherent impotencies.'' They can do only what they have been ''contrived'' to do. Reprinted from *American Journal of Psychology* **1** (1887), 165–170. (JVR) #24.4.139

PETERSON, POLLY A. *See* #24.4.12.

PHILI, CRISTINE. La loi suprême de Hoëné-Wroński: La rencontre de la philosophie et des mathématiques, in #24.4.10, pp. 289–308. A discussion of the history of the ''supreme law'' of J. M. Hoëné-Wroński based on philosophical and mathematical considerations. (VA) #24.4.140

POLOTOVSKII, GRIGORII M. Dmitrii Andreevich Gudkov, in V. Kharlamov, A. Korchagin, G. Polotovskii, and O. Viro, eds., *Topology and Real Algebraic Varieties and Related Topics*, Providence: American Mathematical Society, 1996, pp. 1–9. An appreciation of the life and work in algebraic geometry of D. A. Gudkov (1918–1992). (DEZ) #24.4.141

POURPRIX, BERNARD. G. S. Ohm théoreticien de l'action contiguë, *Archives internationales d'histoire des sciences* **45** (1995), 30–56. An explanation of the ''differences in scientific style between Fourier, Navier and Ohm, and [an interpretation] of Ohm's work as the expression of a theory of contiguous action between particles.'' The major result was Ohm's famous 1827 work on electrical circuits. See the review by Peter M. Harman in *Mathematical Reviews* **96m**:01012. (JA) #24.4.142

PRABHA JAIN, KUMARI. *See* #24.4.90.

PRIESTLY, MAC. What Did Democritus Really Do? *Bulletin CSHPM/SCHPM* **20** (1997), 8. The author suggests an argument that Democritus might have used to compute the volume of a pyramid. (DEZ) #24.4.143

PSILLOS, STATHIS. Poincaré's Conception of Mechanical Explanation, in Jean-Louis Greffe, Gerhard Heinzmann, and Kuno Lorenz, eds., *Sonderdruck aus Henri Poincaré: Science et philosophie* (Berlin: Akademie Verlag, 1996), pp. 177–191. A review of Poincaré's conception of mechanical explanation in relation to his conventional view of mechanics. (DEZ) #24.4.144

QU, AN JING. Gang Bian's Successive Piecewise Parabolic Interpolation [in Chinese], *Journal of Northwest University* **26** (1996), 1–6. An explanation of the convergence and remainder of an interpolation method used by Gang Bian when constructing a calendar in the year 892. (DEZ) #24.4.145

RAJAGOPAL, PINAYUR. Indian Mathematics and the West, in Ruth Hayhoe, ed., *Knowledge across Cultures*, Wuhan, China: Hubei Educational Press, 1993, pp. 120–136. The evolution of the decimal number system is traced from Vedic rituals in India (c. 800 B. C.) to the publication of Rafael Bombelli's *Algebra* in 1572. (DEZ) #24.4.146

RAJAGOPAL, PINAYUR. Mathematical Problem Solving in Medieval India and Europe, *Arhat Vacana* **5**(3) (1993), 77–92. An analysis and a contrast of the development of mathematics as an independent subject in India and in the West between 650 and 1150. (DEZ) #24.4.147

RAJAGOPAL, PINAYUR. Practical and Commercial Problems in Indian Mathematics, *Arhat Vacana* **4**(1) (1992), 55–70. A description of *patiganita*, the mathematics needed for daily living, using the *Ganita sara sangraha* of Mahavira as a prototype. The author considers the question of why no commercial or scientific development followed this work in India in a manner similar to developments after Leonardo of Pisa's works. (DEZ) #24.4.148

RAJAGOPAL, PINAYUR. The *Sthananga Sutra* Programme in Indian Mathematics, *Arhat Vacana* **3**(2) (1991), 1–8. A comparison of the *Sthananga Sutra* and Brahmagupta-Bhaskara programs of mathematics provides a picture of the origin, growth, and evolution of *patiganita*. It also provides a perspective on the Jaina contributions to Indian mathematics. (DEZ) #24.4.149

RAV, YEHUDA. *See* #24.4.21.

REITEN, IDUN. *See* #24.4.22.

RESTREPO SIERRA, GUILLERMO. ¿René Descartes cientifista? [René Descartes, Scientist?] in #24.4.2, pp. 171–206. The author tours the scientific interpretations of Cartesian thought, i.e., those which try to separate his scientific thought from his philosophical thought. He finally arrives at an analysis relating analytic geometry to the *Mathesis universalis*, proposing a Cartesian paradigm for modern science. (VA) #24.4.150

RICCA, RENZO L. The Contributions of Da Rios and Levi-Civita to Asymptotic Potential Theory and Vortex Filament Dynamics, *Fluid Dynamics Research* **18** (1996), 245–268. Detailed account of the work of L. S. Da Rios and T. Levi-Civita on three-dimensional vortex dynamics. See the review in *Mathematical Reviews* **97e**:01014. (CJ) #24.4.151

RINGEL, C. M. *See* #24.4.22.

RODRÍGUEZ-CONSUEGRA, FRANCISCO A. Gödel's Unpublished Manuscripts, 1930–1970, *Modern Logic* **6** (1996), 413–421. An extended book review of Kurt Gödel, *Collected Works. Vol. III. Unpublished Essays and Lectures*, New York/Oxford: Oxford Univ. Press, 1995. (DEZ) #24.4.152

ROMANO, ANTONELLA. *See* #24.4.72.

SAMSÓ-MOYA, JULIO. *See* #24.4.27, #24.4.66, #24.4.87, and #24.4.89.

SAMUELSON, PAUL A. *See* #24.4.91.

SERRANO, GONZALO. ¿Qué nos importa Descartes todavía? [Why Is Descartes Still Important?] in #24.4.2, pp. 1–10. From a personal point of view the author underlines why even today Descartes's thought should be important to us. (VA) #24.4.153

SERRES, MICHEL. *Les origines de la géométrie*, Paris: Flammarion, 1993, 339 pp., 120 F. See the review by Victor V. Pambuccian in *Mathematical Reviews* **97e**:01027. (CJ) #24.4.154

SERRES, MICHEL, ed. *Éléments d'histoire des sciences*, Paris: Bordas, 1989, vi + 576 pp. See *Mathematical Reviews* **97a**:01001 for the table of contents of this book, which includes many articles on the history of mathematics. (DEZ) #24.4.155

SHEA, WILLIAM R. *See* #24.4.180.

SHEYNIN, OSCAR. *Aleksandr A. Chuprov: Life, Work, Correspondence. The Making of Mathematical Statistics*, Göttingen: Vandenhoeck & Ruprecht, 1996, 144 pp., DM 52.00. Study of the life and work of the best Russian statistician of the first quarter of the 20th century. Translated and revised from the 1990 Russian edition by the author. Edited and with a preface by Martin Beckmann, Heinrich Strecker, and Rolf Wiegert. See the review by Pierre Crepel in *Mathematical Reviews* **97e**:01015. (CJ) #24.4.156

SHORTLAND, MICHAEL. *See* #24.4.67.

SIEGMUND-SCHULTZE, REINHARD. National Styles in Mathematics between the World Wars? in #24.4.10, pp. 243–253. Using (1) distinction between descriptive and normative use of the notion of style, (2) the definition of a style referred to the process of production rather than to the resultant artifact, (3) stylistic plurality, (4) national styles, and (5) mathematical styles, with the aid of some historical examples, the author discusses what national style, national traditions, or national schools would be. (VA) #24.4.157

SIEGMUND-SCHULTZE, REINHARD. The Emancipation of Mathematical Research Publishing in the United States from German Dominance (1878–1945), *Historia Mathematica* **24** (1997), 135–166. An examination of mathematical research publishing in the U.S., mainly centered in the years between the two World Wars, that quantifies the shift in dominance of world mathematics from Germany in the 1920s to the U.S. in the 1930s. Despite the title, the author concludes that the American mathematical community did not fully ''emancipate'' itself from German ''dominance,'' though it serves as an example of ''internationalized science.'' (DEZ) #24.4.158

SIMMONS, KEITH. Poincaré and Paradox, in Jean-Louis Greffe, Gerhard Heinzmann, and Kuno Lorentz, eds., *Sonderdruck aus Henri Poincaré: Science et philosophie*, Berlin: Akademie Verlag, 1996, pp. 528–539, 586–587. Examines two different characterizations of the notion of impredicative definition presented by Poincaré, demonstrating that one of them can lead to a contextual solution to paradoxes. (EAM) #24.4.159

SINACEUR, HOURYA. Le rôle de Poincaré dans la genèse de la métamathématique de Hilbert, in Jean-Louis Greffe, Gerhard Heinzmann, and Kuno Lorenz, eds., *Sonderdruck aus Henri Poincaré: Science et philosophe*, Berlin: Akademie Verlag, 1996, pp. 493–511. Discusses the role that Poincaré played in the development of Hilbert's proof theory. See the review by E. Mendelson in *Mathematical Reviews* **97e**:01016. (CJ) #24.4.160

SINGER, ISADORE M. *See* #24.4.91.

SINGH, S. L., AND CHAND, RAMESH. Hindu Trigonometry, *The Journal of Natural and Physical Sciences* **5/8** (1991/1994), 159–166. The authors show that the trigonometric formulas in *Siddhanta Siromani* traveled from India to Europe via the Arab world. (DEZ) #24.4.161

SJÖBERG, BORIS HÅKAN. Some Aspects of the History of Mathematical Notations [in Swedish], *Normat* **44** (1996), 1–7, 44. On the origins of some common mathematical notations. (DEZ) #24.4.162

SMITHIES, FRANK. The Shaping of Functional Analysis, *Bulletin of the London Mathematical Society* **29** (1997), 129–138. Three ''main currents of ideas'' are identified which, during the years 1895–1938, led from notions of infinite dimensional spaces to the centrality of Banach spaces in functional analysis. (JA) 24.4.163

SMITHIES, FRANK. *See also* #24.4.98, #24.4.102, and #24.4.106.

SOFONEA, LIVIU, AND IONESCU-PALLAS, NICHOLA. The Origin of the Conception and Mathematical Formation of the Idea/Principle of Invariance in the Research of Electromagnetic Phenomena, in #24.4.10, pp. 255–280. (VA) #24.4.164

SOLDATOV, ALEXANDER V. Mathematics in the Structure of the Scientific Picture of the World (Past and Present), in #24.4.10, pp. 337–344. According to the author, ''the using of mathematics within a scientific picture of the world is determined by a number of factors.'' He lists experimental verifiability, conventionality, belonging to the culture of a certain epoch, among others. (VA) #24.4.165

SONDHEIMER, E. H. *See* #24.4.98.

SPEISER, DAVID. The Kepler Problem from Newton to Johann Bernoulli, *Archive for History of Exact Sciences* **50** (1996), 103–116. A survey of the work of Galileo, Newton, Johann Bernoulli, Euler, and others on the relationships between central forces and orbital paths. Various disputes in which Bernoulli was involved receive particular attention. (LH) #24.4.166

SPENCER, DONALD, D. *Key Dates in Number Theory History: From 10,529 BC to the Present*, Ormond Beach, FL: Camelot, 1995, 125 pp., paperbound, $12.95. This book contains a time line for the history of number theory from a Babylonian tablet to Wiles's proof of Fermat's Last Theorem, with biographical sketches. (DEZ) #24.4.167

STANLEY, RICHARD P. Hipparchus, Plutarch, Schröder, and Hough, *American Mathematical Monthly* **104** (1997), 344–350. The role of F. W. K. E. Schröder (1841–1902) and David Hough (b. 1949) in solving a mysterious statement by Plutarch concerning a combinatorial result of Hipparchus. (DEZ) #24.4.168

STILLWELL, JOHN. Poincaré, Geometry and Topology, in Jean-Louis Greffe, Gerhard Heinzmann, and Kuno Lorenz, eds., *Sonderdruck aus Henri Poincaré: Science et philosophie*, Berlin: Akademie Verlag, 1996, pp. 231–240. Explains the role of Poincaré in using Euclidean and hyperbolic geometry to investigate the topology of closed orientable surfaces. See the review by Jože Vrabec in *Mathematical Reviews* **97e**:01012. (CJ) #24.4.169

STROOCK, DANIEL W. *See* #24.4.91.

STRUIK, DIRK J. *See* #24.4.91.

SWETZ, FRANK. Some Not So Random Thoughts about the History of Mathematics—Its Teaching, Learning, and Textbooks, *Primus* **5** (1995), 97–107. The author provides a good beginning for thinking through the issues one must confront in designing a history course. (VJK) #24.4.170

SWIJTINK, ZENO G. *See* #24.4.81, #24.4.111, and #24.4.126.

TAHIR, HUSSEIN. Pappus and Mathematical Induction, *Australian Mathematical Society Gazette* **22** (1995), 166–167. A short note arguing that mathematical induction was known to Pappus. (DEZ) #24.4.171

TATTERSALL, JAMES J. *See* #24.4.76.

TEMPCZYK, MICHAL. Fractal Geometry—The Case of a Rapid Career, *International Studies in the Philosophy of Science* **10** (1996), 53–65. The author applies Imre Lakatos's methods to the development of fractal geometry and suggests that only through Mandelbrot's deliberate creation of a theory did the examples, though long known, become no longer anomalous. Reviewed by J. S. Joel in *Mathematical Reviews* **97c**:01027. (ACL) #24.4.172

TERJANIAN, GUY. L'oeuvre arithmétique de Kummer, *Gazette des mathématiciens* **66** (1995), 45–53. Ernst Eduard Kummer, influenced by Gauss and Dirichlet, worked in number theory between 1842 and 1855. This paper presents a modern mathematical view of Kummer's work and points out how he made analogies between decomposition in number theory and in chemistry. Reviewed by Craig G. Fraser in *Mathematical Reviews* **97c**:01038. (ACL) #24.4.173

THOMAS, R. S. D. *See* #24.4.15.

THOMSON, GARRET. Las dudas de Descartes y el lenguaje privado [Descartes's Doubts and Private Language], in #24.4.2, pp. 207–217. Descartes' hypothesis that the ideas in the mind are the immediate object of perception seems to oppose Wittgenstein's argument against private languages. (VA) #24.4.174

TIKHOMIROV, V. M. The Evolution of Methods of Convex Optimization, *American Mathematical Monthly* **103** (1996), 65–71. Sketch of the development of linear programming from Kantorovich in 1939 to the present, including the author's work with A. Yu. Levin and L. G. Khachian. (DEZ) #24.4.175

TÖPFER, H.-J. *See* #24.4.79.

TUROWICZ, ANDRZEJ. On a proof of the Weierstrass–Stone Theorem [in Polish], *Wiadomości Matematyczne* **31** (1995), 149–150. The author describes his collaboration with Stanisław Mazur. See *Mathematical Reviews* **97c**:01031 for further information in English. (DEZ) #24.4.176

VAN BRUMMELEN, GLEN. History-of-Mathematics Courses on the Web, *Bulletin CSHPM/SCHPM* **20** (1997), 14–15. Three sources of material available on the Web for teachers of history-of-mathematics courses, and musings on their use. (DEZ) #24.4.177

VANNINATHAN, M. On the Work of P.-L. Lions, *Current Science* **70** (1996), 125–135. A description of certain physical models associated with the work of 1994 Fields Medal winner, P. L. Lions. (DEZ) #24.4.178

VEA, FERNANDO. The influence of French Mathematics Textbooks on the Establishment of the Liberal Education System in Spain, in #24.4.10, pp. 365–390. An explanation of the 19th-century influence of French mathematics textbooks, in French or translated, on Spanish secondary or university education. (VA) #24.4.179

VELAMAZÁN, MARÍA ÁNGELES. *See* #24.4.11.

VILAIN, CHRISTIANE. La loi galileenne et la dynamique de Huygens, *Revue d'histoire des mathématiques* **2** (1996), 95–117. The author explores ''implicit'' first principles in the dynamics of Galileo and Huygens whose concept of force as centrifugal contrasted with the later Newtonian concept of force as centripetal. Both approaches make use of geometry, such as the parabola. Reviewed by William R. Shea in *Mathematical Reviews* **97c**:01021. (ACL) #24.4.180

VILAIN, CHRISTIANE. *See also* #24.4.57.

VOLKERT, KLAUS. The Early History of Poincaré's Conjecture, in Jean-Louis Greffe, Gerhard Heinzmann, and Kuno Lorenz, eds., *Sonderdruck aus Henri Poincaré: Science et philosophie*, Berlin: Akademie Verlag, 1996, pp. 241–250. A review of Poincaré's role in the early development of the topology of 3-dimensional manifolds. See the review by Jože Vrabec in *Mathematical Reviews* **97e**:01013. (CJ) #24.4.181

VOLODARSKII, A. I. *See* #24.4.88.

VRABEC, JOŽE. *See* #24.4.169 and #24.4.181.

WENDLAND, W. *See* #24.4.79.

WIGHTMAN, ARTHUR S., ed. *The Collected Works of Eugene Paul Wigner: Part A. The Scientific Papers. Vol. I*, Berlin: Springer-Verlag, 1993, xii + 717 pp., $159.95. Contains a biographical sketch of E. P. Wigner by Jagdish Mehra, a preface by Jagdish Mehra and Arthur S. Wightman, annotations by Brian R. Judd and George W. Mackey, and numerous articles by Wigner on quantum mechanics and the use of group representations in this field. See the review by A. J. Coleman in *Mathematical Reviews* **97e**:01023. (CJ) #24.4.182

WILLIAM OF SHERWOOD. *Introductiones in logicam: Einführung in die Logik*, Hamburg: Felix Meiner Verlag, 1995, xxxiv + 331 pp., DM 86. Dual Latin-German text of *Introductiones in logicam* with substantial footnotes. See the review by Ignacio Angelelli in *Mathematical Reviews* **97a**:01019. (GSS) #24.4.183

WILSON, ROBIN. *See* #24.4.67.

WOLFF, STEFAN L. Von der Hydrodynamik zur kinetischen Gastheorie—Oskar Emil Meyer, *Centaurus* **37** (1994), 321–348. O. E. Meyer's work on the viscosity of gases, which led to his 1877 text, ''played a significant role in the establishment of the kinetic theory of gases.'' See the review by Peter M. Harman in *Mathematical Reviews* **96m**:01015. (JA) #24.4.184

WUSSING, HANS. Implizite gruppentheoretische Denkformen in den *Disquisitiones arithmeticae* von Carl Friedrich Gauß, in Minaketan Behara, Rudolf Fritsch, and Rubens G. Linz, eds., *Proceedings of the 2nd Gauss Symposium*, Berlin: De Gruyter, 1995, pp. 179–185. This paper addresses group-theoretic concepts in *Disquisitiones arithmeticae*. See the review by G. Frei-Imfeld in *Mathematical Reviews* **97a**:01036. (GSS) #24.4.185

YUSHKEVICH, ADOLF PAVLOVICH. *Mathematics and Its History* [in Russian], Moscow: Yanus, 1996, 412 pp., hardbound. Biographical comments on the renowned historian of mathematics A. P. Yushkevich (1906–1993) by Sergei S. Demidov (pp. 6–10), followed by a collection of nine papers by Yushkevich

divided into his three basic areas of interest. The three papers on ''Mathematics in the Middle Ages'' are ''Omar Khayyam and his *Algebra*'' (pp. 11–58), ''The Mathematics of the People in Central Asia from the 9th through the 15th Century'' (pp. 59–85), and ''The Achievements of Chinese Academics in the Area of Mathematics'' (pp. 86–114). The four papers on ''The Development of Basic Concepts in Analysis'' are ''The Origin of the Concept of the Defnite Integral with Cauchy'' (pp. 115–165), ''Toward a History of the Controversy of the Vibrating String Problem'' (pp. 166–175), ''The Development of the Concept of a Function'' (pp. 176–199), and ''The Development of the Concept of Limit with K. Weierstrass'' (pp. 200–264). The two papers on ''The History of Mathematics in Russia'' are ''Academician S. E. Gurev and His Role in the Development of Russian Science'' (pp. 265–332) and ''Mathematics at Moscow State University during its First 100 Years'' (pp. 333–412). (DEZ) #24.4.186

ZEITMAN, R. SUZANNE. *See* #24.4.121.

ZEMÁNEK, JAROSLAV. *See* #24.4.97.

ZHENHUA, JIANG. *See* #24.4.43.

David E. Zitarelli has written: 'EPADEL'.Â David E. Reed has written: 'A Culture of Service'. What has the author David E Procter written? David E. Procter has written: 'Civic Communion'. By David E. Zitarelli, Temple University. Edited by Amy Shell-Gellasch, Pacific Lutheran University. Book: Hands on History. Published by: Mathematical Association of America. Published online: 26 October 2011. Print publication: 01 October 2007, pp 41-48. Chapter. Export citation.Â Subdirectly irreducible Rees matrix semigroups. David E. Zitarelli. Journal: Bulletin of the Australian Mathematical Society / Volume 16 / Issue 3 / June 1977. Published online by Cambridge University Press: 17 April 2009, pp. 351-359. Print publication: June 1977. Article. Access. PDF.