

Al Khwarizmi Et L Al Jabr Ac Strasbourg

One of the elite scholars in Baghdad's prestigious House of Wisdom, al-Khwarizmi is best remembered for his famous work *Al-Jabr wa al-Muqabala*, the text that defined the branch of mathematics known as algebra. He was also an accomplished astronomer and geographer. This fascinating biography describes in vivid detail the Islamic world's Golden Age, a period during the Middle Ages when learning and scientific advancement were revered and honored. Readers will learn what is known of al-Khwarizmi's life, as well as the pertinent history of both the Arab world and the fields of science in which al-Khwarizmi excelled. The book description for the previously published "Introduction to Islamic Theology and Law" is not yet available.

From ancient Mesopotamia into the 20th century, "the Circle of Justice" as a concept has pervaded Middle Eastern political thought and underpinned the exercise of power in the Middle East. The Circle of Justice depicts graphically how a government's justice toward the population generates political power, military strength, prosperity, and good administration. This book traces this set of relationships from its earliest appearance in the political writings of the Sumerians through four millennia of Middle Eastern culture. It explores how people conceptualized and acted upon this powerful insight, how they portrayed it in symbol, painting, and story, and how they transmitted it from one regime to the next. Moving towards the modern day, the author shows how, although the Circle of Justice was largely dropped from political discourse, it did not disappear from people's political culture and expectations of government. The book demonstrates the Circle's relevance to the Iranian Revolution and the rise of Islamist movements all over the Middle East, and suggests how the concept remains relevant in an age of capitalism. A "must read" for students, policymakers, and ordinary citizens, this book will be an important contribution to the areas of political history, political theory, Middle East studies and Orientalism. Despite its importance in the history of Ancient science, Menelaus' Spherics is still by and large unknown. This treatise, which lies at the foundation of spherical geometry, is lost in Greek but has been preserved in its Arabic versions. The reader will find here, for the first time edited and translated into English, the essentials of this tradition, namely: a fragment of an early Arabic translation and the first Arabic redaction of the Spherics composed by al-M?h?n? /al-Haraw?, together with a historical and mathematical study of Menelaus' treatise. With this book, a new and important part of the Greek and Arabic legacy to the history of mathematics comes to light. This book will be an indispensable acquisition for any reader interested in the history of Ancient geometry and science and, more generally, in Greek and Arabic science and culture.

In *On Both Sides of the Strait of Gibraltar* Julio Samsó shows that astronomical sources, written in al-Andalus, the Maghrib and the Iberian Peninsula, belong to the same tradition and emphasizes the role of al-Andalus and the Iberian

Peninsula in the transmission of Islamic astronomy to medieval Europe. First Published in 1996. Routledge is an imprint of Taylor & Francis, an informa company.

Contains material that should prove helpful to sci-tech librarians in furthering their understanding and appreciation of science as a broadly-based and creative experience - and how to use these titles to share this understanding with students and other readers.

This study of mathematical instrumentation in the Mamluk world contains the edition and translation of a unique, richly-illustrated treatise, and provides a fascinating historical account of several instrument models that were thus far unknown or inadequately documented.

How are processes of vision, perception, and sensation conceived in the Renaissance? How are those conceptions made manifest in the arts? The essays in this volume address these and similar questions to establish important theoretical and philosophical bases for artistic production in the Renaissance and beyond. The essays also attend to the views of historically significant writers from the ancient classical period to the eighteenth century, including Plato, Aristotle, Plotinus, St Augustine, Ibn Sina (Avicenna), Ibn al-Haytham (Alhazen), Ibn Sahl, Marsilio Ficino, Nicholas of Cusa, Leon Battista Alberti, Gian Paolo Lomazzo, Gregorio Comanini, John Davies, Rene Descartes, Samuel van Hoogstraten, and George Berkeley. Contributors carefully scrutinize and illustrate the effect of changing and evolving ideas of intellectual and physical vision on artistic practice in Florence, Rome, Venice, England, Austria, and the Netherlands. The artists whose work and practices are discussed include Fra Angelico, Donatello, Leonardo da Vinci, Filippino Lippi, Giovanni Bellini, Raphael, Parmigianino, Titian, Bronzino, Johannes Gump and Rembrandt van Rijn. Taken together, the essays provide the reader with a fresh perspective on the intellectual confluence between art, science, philosophy, and literature across Renaissance Europe. The international journal for critical analysis of science and the responsibility of scientists.

The modern concept and study of civilization have their roots, not in western Europe, but in the spirit of scientific investigation associated with a self-conscious Islamicate civilization. What we call modernity cannot be fathomed without this historical connection. We owe every major branch of science known today to the broad tradition of systematic inquiry that belongs to a "region of being"—as Heidegger would say—whose theoretical, practical and institutional dimensions the philosophy of that civilization played an unprecedented role in creating. This book focuses primarily on the philosophical underpinnings of questions relating to civilization, personhood and identity. Contemporary society and thinking in western Europe introduced new elements to these questions that have altered how collective and personal identities are conceived and experienced. In the age of "globalization," expressions of identity (individual, social and cultural) survive precariously outside their former boundaries, just when humanity faces perhaps

its greatest challenges—environmental degradation, policy inertia, interstate bellicosity, and a growing culture of tribalism. Yet, the world has been globalized for at least a millennium, a fact dimmed by the threadbare but still widespread belief that modernity is a product of something called the West. One is thus justified in asking, as many people do today, if humanity has not lost its initiative. This is more a philosophical than an empirical question. There can be no initiative without the human agency that flows from identity and personhood—i.e., the way we, the acting subject, live and deliberate about our affairs. Given the heavy scrutiny under which the modern concept of identity has come, Dr. Shaker has dug deeper, bringing to bear a wealth of original sources from both German thought and *ʿikmah* (Islamicate philosophy), the latter based on material previously unavailable to scholars. Posing the age-old question of identity anew in the light of these two traditions, whose special historical roles are assured, may help clear the confusion surrounding modernity and, hopefully, our place in human civilization. Proximity to Scholasticism, and therefore Islamicate philosophy, lent German thought up to Heidegger a unique ability to dialogue with other thought traditions. Two fecund elements common to Heidegger, *Q?naw?* and *Mull? ?adr?* are of special importance: *Logos* (utterance, speech) as the structural embodiment at once of the primary meaning (essential reality) of a thing and of divine manifestation; and the idea of unity-in-difference, which *?adr?* finally formulated as the substantial movement of existence. But behind this complexity is the abiding question of who Man is, which cannot be answered by theory alone. Heidegger, who occupies a good portion of this study, questioned the modern ontology at a time of social collapse and deep spiritual crisis not unlike ours. Yet, that period also saw the greatest breakthroughs in modern physics and social science. The concluding chapters take up, more specifically, identity renewal in Western literature and Muslim “reformism.” The renewal theme reflects a point of convergence between the Eurocentric worldview, in which modernism has its secular aesthetics roots, and a current originating in Ibn Taymiyyah’s reductionist epistemology and skeptical fundamentalism. It expresses a hopeless longing for origin in a historically pristine “golden age,” an obvious deformation of philosophy’s millennial concern with the commanding, creative oneness of the Being of beings.

This is a revised edition of the *?rst* printing which appeared in 2002. The book is based on lectures at the University of Bergen, Norway. Over the years these lectures have covered many different aspects and facets of the wonderful *?eld* of geometry. Consequently it has never been possible to give a full and *?nal* account of geometry as such, at an undergraduate level: A carefully considered selection has always been necessary. The present book constitutes the main central themes of these selections. One of the groups I am aiming at, is future teachers of mathematics. All too often the texts dealing with geometry which go into the syllabus for teacher-students present the material in ways which appear pedantic and formalistic, suppressing the very powerful and

dynamic character of this old ?eld, which at the same time so young. Geometry is a ?eld of mathematical insight, research, history and source of artistic inspiration. And not least important, an integral part of our common cultural heritage.

A Companion to Medieval Toledo. Reconsidering the Canons explores the limits of "Convivencia" through new and problematized readings and initiates the non-specialist into the historical, cultural, and religious complexity of the iconic city. This book discusses Arab history, law, philosophy, politics, and literature, analyzing the challenges and responses aroused by the interaction between Western culture and the ancient and modern Arab cultures. It offers a wealth of information on the forces that have shaped Arab civilization and on several of the major figures who have contributed to its development. Some of the outstanding contributions include a comprehensive study of Dr. Zurayk as the advocate of rationalism in modern Arab thought by Hani A. Faris; a sober but challenging look at the use of Islamic history in our time by Muhsin Mahdi; an analysis of the expression of historicity in the Koran by Jacques Berque; an explanation of the concept of equity in Islamic law by Majid Khadduri; and the revelation of a Mamluk Magna Carta by Aziz Sourial Atiya.

This book follows the development of classical mathematics and the relation between work done in the Arab and Islamic worlds and that undertaken by the likes of Descartes and Fermat. 'Early modern,' mathematics is a term widely used to refer to the mathematics which developed in the West during the sixteenth and seventeenth century. For many historians and philosophers this is the watershed which marks a radical departure from 'classical mathematics,' to more modern mathematics; heralding the arrival of algebra, geometrical algebra, and the mathematics of the continuous. In this book, Roshdi Rashed demonstrates that 'early modern,' mathematics is actually far more composite than previously assumed, with each branch having different traceable origins which span the millennium. Going back to the beginning of these parts, the aim of this book is to identify the concepts and practices of key figures in their development, thereby presenting a fuller reality of these mathematics. This book will be of interest to students and scholars specialising in Islamic science and mathematics, as well as to those with an interest in the more general history of science and mathematics and the transmission of ideas and culture. The reports of a conference of 11 scholars who began the task of examing together primary sources that might shed som elight on exactly how and in what fomrs mathematical problems, concepts, and techniques may have been transmitted between various civilizations, from antiquity down to the European Renaissance following more or less the legendary silk routes between China and Western Europe.

This translation and study extend our knowlege of the Arabic genre of the maq?ma by some years. If translations of the genre are lacking, literary critical studies of it are even rarer. Therefore, the work will be of interest to scholars of Arabic, Spanish, and other literatures, to comparativists, literary historians, critics, and theoreticians.

A History of Mathematics: From Mesopotamia to Modernity covers the evolution of mathematics through time and across the major Eastern and Western civilizations. It begins in Babylon, then describes the trials and tribulations of the Greek mathematicians. The important, and often neglected, influence of both Chinese and

Islamic mathematics is covered in detail, placing the description of early Western mathematics in a global context. The book concludes with modern mathematics, covering recent developments such as the advent of the computer, chaos theory, topology, mathematical physics, and the solution of Fermat's Last Theorem. Containing more than 100 illustrations and figures, this text, aimed at advanced undergraduates and postgraduates, addresses the methods and challenges associated with studying the history of mathematics. The reader is introduced to the leading figures in the history of mathematics (including Archimedes, Ptolemy, Qin Jiushao, al-Kashi, al-Khwarizmi, Galileo, Newton, Leibniz, Helmholtz, Hilbert, Alan Turing, and Andrew Wiles) and their fields. An extensive bibliography with cross-references to key texts will provide invaluable resource to students and exercises (with solutions) will stretch the more advanced reader.

This book honors the career of historian of mathematics J.L. Berggren, his scholarship, and service to the broader community. The first part, of value to scholars, graduate students, and interested readers, is a survey of scholarship in the mathematical sciences in ancient Greece and medieval Islam. It consists of six articles (three by Berggren himself) covering research from the middle of the 20th century to the present. The remainder of the book contains studies by eminent scholars of the ancient and medieval mathematical sciences. They serve both as examples of the breadth of current approaches and topics, and as tributes to Berggren's interests by his friends and colleagues.

The first critical edition of Al-Khwarizmi's Algebra.

An understanding of developments in Arabic mathematics between the IXth and XVth century is vital to a full appreciation of the history of classical mathematics. This book draws together more than ten studies to highlight one of the major developments in Arabic mathematical thinking, provoked by the double fecundation between arithmetic and the algebra of al-Khwarizmi, which led to the foundation of diverse chapters of mathematics: polynomial algebra, combinatorial analysis, algebraic geometry, algebraic theory of numbers, diophantine analysis and numerical calculus. Thanks to epistemological analysis, and the discovery of hitherto unknown material, the author has brought these chapters into the light, proposes another periodization for classical mathematics, and questions current ideology in writing its history. Since the publication of the French version of these studies and of this book, its main results have been admitted by historians of Arabic mathematics, and integrated into their recent publications. This book is already a vital reference for anyone seeking to understand history of Arabic mathematics, and its contribution to Latin as well as to later mathematics. The English translation will be of particular value to historians and philosophers of mathematics and of science.

The first comprehensive study of the philosophical achievements of twelfth-century Western Europe.

Brockelmann's History of the Arabic Written Tradition offers bio-bibliographic information about works written in Arabic and their authors, with an emphasis on manuscripts from the classical period. This originally multivolume reference work is divided in chronologically organized sections, which are subdivided by literary genre. Individual entries typically consist of a biographical section and a list of the author's works in manuscript and print, with references to secondary literature. The "Brockelmann", now also available in English, is an indispensable research tool for anyone working on the Islamic world in general and the Middle

East in particular.

"Enthralling ... After reading it, we cannot see the past in the same comforting haze of age-old stories, faithfully and uncritically retold from teacher to pupil down the years ... Invaluable for mathematics teachers at all levels."--New Scientist.

The Biographical Encyclopedia of Astronomers is a unique and valuable resource for historians and astronomers alike. The two volumes include approximately 1550 biographical sketches on astronomers from antiquity to modern times. It is the collective work of about 400 authors edited by an editorial board of 9 historians and astronomers, and provides additional details on the nature of an entry and some summary statistics on the content of entries. This new reference provides biographical information on astronomers and cosmologists by utilizing contemporary historical scholarship. Individual entries vary from 100 to 1500 words, including the likes of the superluminaries such as Newton and Einstein, as well as lesser-known astronomers like Galileo's acolyte, Mario Guiducci. A comprehensive contributor index helps researchers to identify the authors of important scientific topics and treatises.

This book covers 250 milestones in mathematical history, beginning millions of years ago with ancient "ant odometers" and moving through time to our modern-day quest for new dimensions.

First Published in 2006. Routledge is an imprint of Taylor & Francis, an informa company.

This study analyzes key concepts in al-F'r?b?'s cosmology and provides a new interpretation of his philosophical development through an analysis of the Greco-Arabic sources and a contextualization of his life and thought in the cultural and intellectual milieu of his time.

Medieval Science, Technology, and Medicine details the whole scope of scientific knowledge in the medieval period in more than 300 A to Z entries. This resource discusses the research, application of knowledge, cultural and technology exchanges, experimentation, and achievements in the many disciplines related to science and technology. Coverage includes inventions, discoveries, concepts, places and fields of study, regions, and significant contributors to various fields of science. There are also entries on South-Central and East Asian science. This reference work provides an examination of medieval scientific tradition as well as an appreciation for the relationship between medieval science and the traditions it supplanted and those that replaced it. For a full list of entries, contributors, and more, visit the Routledge Encyclopedias of the Middle Ages website.

the demise of the logical positivism programme. The answers given to these qu- tions have deepened the already existing gap between philosophy and the history and practice of science. While the positivists argued for a spontaneous, steady and continuous growth of scientific knowledge the post-positivists make a strong case for a fundamental discontinuity in the development of science which can only be explained by extrascientific factors. The political, social and cultural environment, the argument goes on, determine both the questions and the terms in which they should be answered. Accordingly, the sociological and historical interpretation - volves in fact two kinds of discontinuity which are closely related: the discontinuity of science as such and the discontinuity of the more inclusive political and social context of its development. More precisely it explains the discontinuity of the former by the discontinuity of the latter subordinating in effect the history of science to the wider political and social history. The underlying idea is that each historical and - cial context generates scientific and philosophical questions of its own. From this point of view the question surrounding the nature of knowledge and its development are entirely new topics typical of the twentieth-century social context reflecting both the level and the scale of the development of science.

La géographie a toujours prédisposés les Arméniens au commerce, ainsi font-ils partie de ces communautés marchandes bien établies, rencontrées sur les routes commerciales de l'Asie, au 16e-18e siècles...

Proceedings of the First International Colloquium on Philosophy, Science, and Technology in

the Middle Ages - September 1973

Here, at last, is the massively updated and augmented second edition of this landmark encyclopedia. It contains approximately 1000 entries dealing in depth with the history of the scientific, technological and medical accomplishments of cultures outside of the United States and Europe. The entries consist of fully updated articles together with hundreds of entirely new topics. This unique reference work includes intercultural articles on broad topics such as mathematics and astronomy as well as thoughtful philosophical articles on concepts and ideas related to the study of non-Western Science, such as rationality, objectivity, and method. You'll also find material on religion and science, East and West, and magic and science.

Classical Mathematics from Al-Khwarizmi to DescartesRoutledge

Historical maps and rare photographs illustrate four centuries of mapping the Moon.

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