Arabic sciences and philosophy

A historical journal



Cambridge University Press

Arabic sciences and philosophy

EDITORIAL COMMITTEE

Basim Musallam (Executive editor) Roshdi Rashed (Executive editor)

University of Cambridge CNRS, Paris
Muhsin Mahdi Jean Jolivet

Harvard University L'Ecole Pratique des Hautes Etudes, Paris

George Saliba Columbia University

Ahmed Hasnaoui (Managing editor) Aline Auger (Editorial secretary)

CNRS, Paris

ADVISORY EDITORIAL BOARD

Geoffrey ER Lloyd André Allard Darwin College, Cambridge FNRS, Belgium Michael E Marmura Charles Butterworth University of Toronto University of Maryland David Pingree Menso Folkerts Brown University University of Munich Bernard R Goldstein A I Sabra Harvard University University of Pittsburgh Richard Sorabji Dimitri Gutas King's College, London Yale University Nathan Sivin Donald R Hill

University College, London

Edward S Kennedy

Princeton, USA

David A King

University of Pennsylvania

Adolph P Youchkevitch

Academy of Sciences, Moscow

Fritz Zimmerman

Goethe-Universität, Frankfurt University of Oxford

SUBSCRIPTIONS. Arabic sciences and philosophy (ISSN: 0957-4239) is published twice a year in March and September. Two parts form a volume. The subscription price of a volume (which includes postage) is £48.00 net (US \$75.00 in USA and Canada) for institutions; £28.00 (US \$39.00) for individuals ordering direct from the publishers and certifying that the journal is for their personal use. Single parts are £25.00 net (US \$39.00 in USA and Canada) plus postage. Orders, which must be accompanied by payment, may be sent to any bookseller or subscription agent or to the publishers: Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2RU, and in the USA and Canada, The Journals Department, 40 West 20th Street, New York, NY 10011-4211, USA. Copies of the journal for subscribers in the USA and Canada are sent by air to New York to arrive with minimum delay. Second class postage paid at New York, NY, and at additional mailing offices. POSTMASTER: send address changes in USA and Canada to Arabic sciences and philosophy, Cambridge University Press, 110 Midland Avenue, Port Chester, New York, NY 10573-9864, USA.

COPYING. This journal is registered with the Copyright Clearance Center, 27 Congress St., Salem, Mass. 01970. Organizations in the USA who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to C.C.C. of the per-copy fee of \$05.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0957-4239/92 \$5.00 + .00.

ISI Tear Sheet Service, 3501 Market Street, Philadelphia, Pennsylvania 19104, USA, is authorised to supply single copies of separate articles for private use only.

For all other use, permission should be sought from Cambridge or the American Branch of Cambridge University Press.

Advertising. Enquiries about advertising in this journal should be sent to the publishers.

C CAMBRIDGE UNIVERSITY PRESS 1992

Arabic Sciences and Philosophy

Volume 2 Number 2 September 1992

CONTENTS

The Contributors	182
Abstracts	183
CHARLES E. BUTTERWORTH The Political Teaching of Averroes	187
GÉRARD SIMON L'Optique d'Ibn al-Haytham et la tradition ptoléméenne	203
AHMAD DALLAL A Non-Ptolemaic Lunar Model from Fourteenth-Century Central Asia	237
OSCAR SHEYNIN Al-Biruni and The Mathematical Treatment of	299

THE CONTRIBUTORS

PROFESSOR CHARLES E. BUTTERWORTH, College of Behavioral and Social Sciences, Department of Government and Politics, University of Maryland, USA

PROFESSOR AHMAD DALLAL, Tyler Annex 8, Smith College, Northampton, MA 01063, USA

PROFESSOR OSCAR SHEYNIN, Mathematisches Institut der Universität zu Köln, Weyertal 86–90, D-5000 Köln 41, Germany

PROFESSOR GÉRARD SIMON, Université Charles de Gaulle/Lille 3, Sciences humaines, Lettres et Arts, 59653 Villeneuve d'Ascq, France