

# Arabic Sciences and Philosophy

A HISTORICAL JOURNAL

25:1 MARCH 2015

CAMBRIDGE  
UNIVERSITY PRESS

# Arabic sciences and philosophy

## EDITORIAL BOARD

EXECUTIVE EDITOR: Roshdi Rashed, CNRS, Paris – University of Tokyo

MANAGING EDITOR: Ahmed Hasnaoui, CNRS, Paris

EDITORIAL SECRETARY: Aline Auger, CNRS, Paris

## ADVISORY EDITORIAL BOARD

Amos Bertolacci

*Scuola Normale Superiore, Pisa*

Charles Burnett

*Warburg Institute, London*

Charles Butterworth

*University of Maryland*

Menso Folkerts

*University of Munich*

Bernard R Goldstein

*University of Pittsburgh*

Dimitri Gutas

*Yale University*

Jan P Hogendijk

*University of Utrecht*

Christian Houzel

*Université Paris 7*

Geoffrey E R Lloyd

*Darwin College, Cambridge*

Luigi Maieru

*University of Calabria*

F Jamil Ragep

*McGill University*

Marwan Rashed

*ENS, Paris*

Nathan Sivin

*University of Pennsylvania*

Richard Sorabji

*King's College, London*

Tony Street

*Faculty of Divinity, Cambridge*

Noel M Swerdlow

*California Institute of Technology*

Robert Wisnovsky

*McGill University*

Deceased members: André Allard, Hélène Bellosta, Donald Hill, Edward S Kennedy, Muhsin Mahdi, Michael E Marmura, David Pingree, Abdelhamid I Sabra, Adolph Youschkevitch

*Revue soutenue par l'Institut des Sciences Humaines et Sociales du CNRS/Published with the support of the Institut des Sciences Humaines et Sociales-CNRS*

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 (excluding VAT) for volume 25 (2015) which includes print and electronic access is £232.00 net (US \$391.00 in USA, Canada and Mexico) for institutions; £63.00 (US \$107.00) for individuals, which includes print only, ordering direct from the publishers and certifying that the journal is for their personal use. The electronic-only price available to institutional subscribers is £196.00 (US \$325.00 in USA, Canada and Mexico). Single parts are £119.00 net (US \$199.00 in USA, Canada and Mexico) plus postage. EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Orders, which must be accompanied by payment, may be sent to any bookseller or subscription agent or to the publishers: Cambridge University Press, Journals Fulfillment Department, UPH, Shaftesbury Road, Cambridge CB2 8BS, UK. and in the USA, Canada and Mexico, The Journals Fulfillment Department, 100 Brook Hill Drive, West Nyack, New York 10994-2133, USA. Japanese prices for institutions are available from Kinokuniya Company Ltd, P.O. Box 55, Chitose, Tokyo 156, Japan, Prices include delivery by air.

COPYING. This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA. 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 \$15.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0957-4239/2015/\$15.00

Organizations authorized by the Copyright Licensing Agency may also copy material subject to the usual conditions.

ISI Tear Sheet Service, 3501 Market Street, Philadelphia, Pennsylvania 19104, USA, is authorized 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.*

Information on *Arabic sciences and philosophy* and all other Cambridge journals can be accessed via [cambridge.org/](http://cambridge.org/).

© CAMBRIDGE UNIVERSITY PRESS 2015

Printed in the United Kingdom by Henry Ling Ltd., at the Dorset Press, Dorchester, Dorset, DT1 1HD

## CONTENTS

ROSHDI RASHED and ATHANASE PAPADOPOULOS On Menelaus' <i>Spherics</i> III.5 in Arabic Mathematics, II: Naṣīr al-Dīn al-Ṭūsī and Ibn Abī Jarrāda	1
GERRIT BOS and Y. TZVI LANGERMANN An Epitome of Galen's <i>On the Elements</i> ascribed to Ḥunayn Ibn Ishāq	33
ALNOOR DHANANI The Impact of Ibn Sīnā's Critique of Atomism on Subsequent <i>Kalām</i> Discussions of Atomism	79
SILVIA DI DONATO Le <i>Kitāb al-Kašf ‘an manāhiq al-adilla</i> d'Averroès: les phases de la rédaction dans les discours sur l'existence de Dieu et sur la direction, d'après l'original arabe et la traduction hébraïque	105
PHILIPPE ABGRALL Les débuts de la projection stéréographique: conception et principes	135