THE 'ARABICK' INTEREST OF THE
NATURAL PHILOSOPHERS
IN SEVENTEENTH-CENTURY ENGLAND
BRILL'S STUDIES IN INTELLECTUAL HISTORY

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THE 'ARABICK' INTEREST OF THE NATURAL PHILOSOPHERS IN SEVENTEENTH-CENTURY ENGLAND

EDITED BY

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'Excesses natural to a small mind in a great place'

Macaulay on Archbishop Laud at Oxford
CONTENTS

Acknowledgements ................................................................. IX
List of Illustrations ................................................................. XI
Introduction: 'The Seventeenth Century: The Age of 'Arabick' .......... 1
  G. A. Russell

I. Background to Arabic Studies in Seventeenth-Century
   England .............................................................................. 20
   P. M. Holt

II. The English Interest in the Arabic-Speaking Christians .......... 30
   Alastair Hamilton

III. Arabists and Linguists in Seventeenth-Century England ....... 54
    Vivian Salmon

IV. Edmund Castell and His Lexicon Heptaglotton (1669) .......... 70
    H. T. Norris

V. The Medici Oriental Press (Rome 1584-1614) and the Impact
   of its Arabic Publications on Northern Europe .................... 88
    Robert Jones

VI. Patrons and Professors: The Origins and Motives for the
    Endowment of University Chairs—in Particular the Laudian
    Professorship of Arabic ..................................................... 109
    Mordechai Feingold

VII. Arabic Manuscripts in the Bodleian Library: The Seventeenth-
    Century Collections ......................................................... 128
    Colin Wakefield

VIII. Arabick Learning in the Correspondence of the
    Royal Society 1660-1677 ................................................... 147
    M. B. Hall

IX. English Orientalists and Mathematical Astronomy .............. 158
    Raymond Mercier
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The present volume is the product of a memorable symposium, which was organised by the editor in 1986 at the Wellcome Institute for the History of Medicine in London. Conceived as an interdisciplinary project, scholars were invited to investigate specific topics pertaining to 'Arabick' within their area of expertise. It was an exciting, pioneering venture into a previously unchartered aspect of British social and intellectual history.

The Symposium was made possible by a generous grant from the Wellcome Trust with the encouragement and support of both A. R. Hall (who was then Acting Head of the Institute and Co-ordinator of the History Panel for the Trust), and W. F. Bynum, present Academic Director of the Institute. It gives me great pleasure to express my gratitude to them, and to A. C. Crombie for his intellectual stimulus and enthusiasm for the project.

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The book was long to emerge for complex reasons. The essays, with one exception, are by those who participated in the original Symposium. To the contributors—colleagues and friends—who patiently awaited the eventual appearance of their work, I offer my sincere appreciation.

In a collective investigation where there is a great deal of overlap, with some of the key figures occupying several domains, a certain amount of repetition is inevitable. Efforts were made to avoid, or at least minimise, unnecessary duplication. Variations, however, of level of interpretation and individual style of presentation remain.

For their helpful comments on various essays of the volume, I wish to thank: Mordechai Feingold, M. B. Hall, P. M. Holt, H. T. Norris, Garret Iker, John McDermott, and especially Alastair Hamilton. I am indebted to Colin Wakefield for kindly supplying the photographs for Illustrations 4, 5, and 7 from the Bodleian Library, Oxford; also to R. Jones for Illustration 3 from Bernard Quaritch Ltd.; and H. T. Norris for illustrations 1 and 2; and

X. The Limited Lure of Arabic Mathematics ........................................... 215
    George Molland

XI. The Impact of the Philosophae autodidactae: Pocockes, John
     Locke and the Society of Friends ........................................... 224
     G. A. Russell

XII. English Medical Writers and their Interest in Classical Arabic
     Medicine in the Seventeenth Century ....................................... 266
     Andrew Wear

XIII. Arabo-Latin Forgeries: The Case of the Summa perfectionis ....... 278
     William Newman

XIV. Coronary Flowers and their 'Arabick' Background ......................... 297
     John Harvey

Index ......................................................................................... 304
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LIST OF ILLUSTRATIONS

1. The Arabic inscription included on Edmund Castell’s own monument which he put up in Hingham Gobion Church in Bedfordshire .......... 73 (Courtesy of J. Byron)

2. The monument to Sir Thomas Adams in St. Mary and St. Margaret Church in Sprowston, Norfolk ........................................... 77 (Courtesy of K. T. Norris)

3. The firman of Sultan Murad III issued at Istanbul in AH 996/ AD 1587, published by the Medici Press in 1594 on the verso of the final page of the Arabic edition of Euclid’s Elements .................... 99 (Courtesy of Bernard Quaritch Ltd.)

4. The title page of the Philosophus autodidactus (1671) ................. 225 (Ashmole 1634, The Bodleian Library, Oxford)

5. The ‘Introduction’ in Pococke’s bilingual edition of the Philosophus autodidactus, pages 2 and 3 ............................................. 229 (Ashmole 1634, The Bodleian Library, Oxford)

6. A portrait of John Locke (d. 1704) engraved by H. Robinson from the original painting by Kneller in the Hall of Christ Church, Oxford 235

7. A portrait of Dr. Edward Pococke (d.1699) .................................. 241
INTRODUCTION

THE SEVENTEENTH CENTURY:
THE AGE OF 'ARABICK'

The medieval transmission from Arabic into Latin helped transform European intellectual and scientific development. By the Renaissance, however, it had served its purpose. As Christendom gradually moved into the Age of the Scientific Revolution, there was no longer any need or grounds for Arabic to be of interest to the West.

From this generally accepted point of view, the essays in the present volume investigate a paradox. They show that, contrary to all expectation, there was a remarkably widespread interest in Arabic. In England it led to Arabic professorships in universities, first at Cambridge (1632), then at Oxford (1634), with Arabic as a requirement for the Arts degree. Arabic was taught at such schools as Westminster. Immense collections became established in private hands and in libraries, exemplified by the Bodleian at Oxford. Bi-lingual editions of Arabic texts were printed; grammars and dictionaries were prepared. Islamic histories based on original Arabic sources were written. This enterprise involved theologians, whether Catholic or Anglican, Puritan or Quaker; scholars, whether Royalist or Parliamentarian; physicians, astronomers, mathematicians, and philosophers. Most surprising of all: the 'forward-looking' natural philosophers pursued Arabic manuscripts, particularly in astronomy and mathematics. After the founding of the Royal Society (1660), Arabic subjects featured substantially in the correspondence and queries of the Fellows. In short, Arabic interest permeated English society at all levels, to include the court, the clergy, the colleges of universities, diplomatic service as well as mercantile companies.

This was not an isolated phenomenon, unique to England, but emerged against the background of similar developments on the Continent, particularly in the Netherlands, and in close contact with scholars in both Catholic and Protestant countries. Considering the extent of its diffusion and far-reaching consequences, this 'second wave' of Arabic interest warrants recognition as a significant aspect of seventeenth-century thought. And yet in the intensively scrutinised intellectual and social landscape of the period, it seems to have remained somewhat invisible to the historian outside specialised studies.
On the surface, the existence of such extensive interest seems difficult to reconcile with historical perceptions of the developments in post-Renaissance Europe. For example, how could 'Arabic' fit in with the view of the sixteenth and seventeenth centuries as a period of radical transformation of scientific and intellectual ideas—a 'revolution'—which constituted a watershed in the history of Western civilisation? In interpretations where the seventeenth-century contemporary emphasis in England appears to be on 'progress' over and above the achievements of antiquity, where does one find a niche for any interest in 'medieval' Arabic? There was also the clearly dismissive attitude of some of its leading 'representative' figures. For instance, as far as Bacon (1561-1626) was concerned, the 'Arabians' did not need to be 'mentioned' at all in the 'growth of the sciences' since antiquity; what had been 'added' by them was 'not much, or of much importance'. Thus the self-perception of the period, with its repudiation of the past—particularly the medieval past, seemed to rule out Arabic interest.

The intellectual 'rehabilitation', in modern research, of the medieval contribution to science, included Arabic, but does not seem to have made it any more relevant to the concerns of the seventeenth century. Even with the shifting grounds of historical scholarship, where the recent tendency has progressively been more contextual, emphasizing the complex interplay of tradition, continuity and change, turning to areas that had been overlooked or neglected, Arabic interest has yet to receive serious consideration.

The medieval impact of Arabic transmission on Latin Christendom is, perhaps, more comprehensible because the West then was at a disadvantage. Prior to the twelfth century, its meager classical resources were in sharp contrast to the extensive Arabic heritage of Greek and Hellenistic philosophy, science, and technology, enriched by Persian, Chinese, and Indian influences. Furthermore, the Islamic expansion had created a cosmopolitan civilisation with great cities, wealthy courts, and a network of communications through trade from Spain to the borders of China. The largely agrarian, feudal, and inward-looking, monastic social structure of Latin Christendom was eclipsed. As a consequence, Arabic became a symbol of wealth, power, and intellectual prestige. It was regarded as the key to a treasure house of knowledge, the acquisition of which was eagerly sought by medieval scholars. Once that knowledge was acquired, however, the key could be disregarded. Therefore when Latin translations became available, Arabic had no relevance. The concern had been with the content of the texts, the knowledge 'preserved' in Arabic, and not with the language in which it was written. In fact, the authors of the Latinised Arabic texts were considered in a cultural limbo—at best in the intellectual company of antiquity. Hence, there was no need to learn the language.

With the Renaissance recovery of Greek originals, the transmission from Arabic seemed to have lost even its intellectual prestige. The humanists' hostility to the corrupting influence of Arabic on the classical tradition was accompanied by an intensified hostility to Islam under the Ottoman threat of further encroachment into Eastern Europe. By the seventeenth century, the 'expansion of Europe' and its growing wealth through trade had tilted the balance of power irreversibly westward. With the slow but definite decline of the Ottoman Empire, and the rise of a more secular outlook on the world, Islam appeared progressively less and less relevant. Perceived in these terms, therefore, the occurrence of a 'second wave' of 'Arabick' interest is not only unexpected; it is astonishing.

To understand the grounds for the rise of this phenomenon, we need to reconsider the fundamental changes within Europe itself between the fifteenth and the seventeenth centuries. The roots of the 'second wave' of interest in Arabic lie, in fact, in the very movements which seemed to rule out any possible basis for its existence: the Protestant Reformation, the Humanist classical revival, and the 'expansion of Europe' and its emergence as the centre of world trade.

'Arabick' in the Service of Protestant Theology

With the Protestant Reformation the Christian world was divided over the fundamental issue of the source of religious authority. For the Catholic Church, it was vested in the doctrine of the apostolic succession, which was repudiated by the Protestants. In the ensuing reassessment of the traditional concepts of religious authority, the primacy acquired by the Bible as the source of doctrine led to the importance of textual accuracy for theological interpretation. It became essential to resurrect the authority of the original texts, not only in Greek, but also in Hebrew in preference to the Latin Vulgate, and to use these for the vernacular translations of Scripture. Thus Hebrew acquired importance for both translation and Biblical exegesis. Translations, which aimed at producing the 'true' meaning of the original texts rather than the literal rendering, required linguistic skills and intimate acquaintance with Hebrew.

There was already a well-established Jewish tradition of Biblical exegesis and commentary on which the Christian 'Hebraic' scholars could draw. This tradition was, however, closely linked to the philological study of Hebrew. Under the influence of Arab grammarians, the study of Hebrew had already evolved in Islamic Spain. The bi-lingual Jewish scholars had access to a
highly developed and systematic study of Arabic grammars and lexicography that had largely arisen in connection with the exegesis of the Qur'an. Some of these comprehensive studies of Hebrew were written in Arabic, employing the terminology of Arabic grammars. They were used in the preparation of Hebrew dictionaries. Thus the importance of Arabic for Hebrew had been recognised and already exploited by Jewish scholars. Subsequently, these studies served as a model for the Hebrew dictionaries of Christian biblical scholars and as the principal source for their study of the scripture. Out of the deep concern to read the Old Testament in the original, Arabic emerged as an ancillary language to Hebrew.35

There were also scholars who were pursuing the study of all Semitic languages as variations of a common source. They came to believe that knowledge of as many Semitic languages as possible would assist Biblical exegesis. These included Arabic. A manifestation of this conviction was the appearance of polyglot Bibles in the sixteenth century. These were continued in the seventeenth century by both Catholic and Protestant scholars as a series of major collaborative undertakings, exemplified by the Paris Polyglot (1626-45), and Walton’s six-volume English Polyglot (1654-57).36

Regarded as a descendant of Hebrew, Arabic acquired, together with Syriac and Aramaic, an importance for Christian theology. It was believed that Arabic could help elucidate difficult passages not only in the Old Testament but also in the Rabbinical commentaries which in turn were being used for the interpretation of the New Testament. Some of these Rabbinical commentaries were also written in Judaeo-Arabic. For this reason, Maimonides (1135-1204) became popular among Protestant theologians, and later among Oxford scholars and Cambridge Platonists.37

The idea that Arabic is essential to scriptural study was reinforced by the discovery of the existence of Arabic versions of the Old and New Testaments. Thus Arabic became incorporated into theological training in the second half of the sixteenth century when scholars began to acquire some acquaintance with Arabic to assist with their Hebrew.38 Accordingly, grammars and lexicons were prepared, based on scriptural texts.39 Hebrew and Arabic remained linked in the seventeenth century. The close affinity perceived between the two languages is exemplified by the fact that at Oxford both the Laudian Professorship of Arabic and the Regius Professorship of Hebrew were held by the same person—Dr. Edward Pococke, whose expertise also extended to Syriac and Aramaic.

Against this background, it becomes clear why scholars passionately defended Arabic as a language when they despised the religion and remained entirely oblivious to the culture.40 The philological importance of Arabic for Scripture, explains why initially most of the Arabists and their patrons came from the clergy, such as Lancelot Andrews (Bishop of Chichester, Ely, and Winchester) and his protégé, at Cambridge, William Bedwell (1563-1632), the ‘father of Arabic studies’ in England; William Laud (Bishop of London and Archbishop of Canterbury) who created and endowed the chair of Arabic at Oxford for Pococke (1604-1691).

An additional element was the existence of Arabic-speaking Christians. Although the medieval missionary ‘chimera’ of converting the Muslim was still pursued, its futility was recognised by the Papacy in Rome, which turned its attention instead to the Arabic-speaking Christians under Muslim rule. An outcome of this policy was the Maronite College set up in Rome (1584) which came to provide native-speaking teachers, such as Gabriel Sionita (Jibr’îl al-Sâhyânî, d. 1648) who taught Arabic in Paris to scholars from Protestant countries.41 In their concern to differentiate the Church of England from that of Rome, as well as from other reformed Churches in Europe, the English saw in the Churches of the East a precursor model. These older Christian Communities, such as the Copts and particularly the Greek Church, had resisted incorporation by the Church of Rome. Arabic was seen as a means of establishing communication with these Christians.42

ARABIC IN THE SERVICE OF SECULAR INTERESTS

The theological interest in Arabic had a secular counterpart arising from the classical scholarship in the Renaissance.43 The textual criticism, which was stimulated by the rediscovery of Greek texts, did not entirely discredit the transmission from Arabic. Ironically, it also led to the recognition of the importance of Arabic sources. Having access to Greek originals meant that some of the Latin translations of their ‘corrupted’ Arabic versions could now be put right. At the same time, however, there were other Latin translations which, in addition to Greek, also required Arabic originals.

Such a recognition seems almost inevitable when we consider the enormous complexity of the Arabic transmission. First of all, the Greek originals of some of the translated material did not exist; they had survived only in Arabic. Secondly, many of the Arabic texts which had been translated into Latin were of encyclopaedic proportions of a synthetic, composite nature, such as the Canon (al-Qânim) of Avicenna (Ibn Sînâ, d.1037). Texts, for example, by Rhazes (al-Râzî, d. 925), Alfarabi (al-Fârâbî, d. 950), Ily Abbas (‘Ali ibn al-‘Abbâs al-Majâshi, d.982/95), Abulcasim (Abû’l-Qâsim al-Zahrâwî, d. c.1109), Averroes (Ibn Rushd, d. 1198) were not direct translations; although derivative, their multiple sources could not always be traced.
or reduced to single Greek texts. Some of the works on astronomy, optics, mathematics, alchemy, medicine, and philosophy also had Arabic/Islamic contributions. Among these, the influential Optics (Kisâb al-Manâzir) of Alhazen (Ibn al-Haytham; d.1040), printed in 1572, to cite one example, contained new knowledge which was not known to the Greeks. These texts had become an essential part of the European intellectual and scientific heritage and of the University curricula both in Catholic and subsequently in Protestant countries. If we take medicine, Avicenna’s Canon was the standard reading in European universities until the late seventeenth century. In fact, the medical training was based on Latinised Arabic texts and their commentaries. The extent of the demand for these books is reflected by the number of editions and re-editions between 1425 and 1610 in the publishing centres all over Europe, such as Padua, Venice, Rome, Basel, Strasbourg, Lyons, Frankfurt, and Nuremberg. The skeptical attitude to Latin translations, then, provided the grounds for an examination of Arabic sources. In the ensuing textual criticism, Avicenna’s Canon, the bible of the academic medical profession, took center stage as a key text. In the second Giunta edition of the Canon (Venice, 1595), its twelfth-century Latin version by Gerard of Cremona was corrected against the more recent fifteenth-century retranslation of Andrea Alpago. Such endeavours demonstrated the philological importance of Arabic for secular subjects.

To consult the Arabic sources, however, scholars needed, in addition to linguistic skills, access to the actual texts, and preferably in print since the manuscripts were difficult to read. Avicenna’s Qanûn became available as one of the first texts to be printed (1593), using Arabic font, by the newly set up Medici Press in Rome. The crucial need for expertise in Arabic was met, as with the vernacular translations of the Bible, again by Jewish scholars largely from the Iberian peninsula in the aftermath of the Inquisition and of forced conversions to Christianity. In the case of Jewish physicians, Reforma

The result, Arabic interest emerged for the first time specifically for philological purposes. By the seventeenth century, the case for Arabic, made by Biblical scholars as well as physicians, formed the basis of apologetics in lectures and orations for the purpose of establishing its study in universities.

England profited by the emigration of Hebraic scholars from war-torn Central Europe, who further promoted the study of Arabic. Already by 1620s, there was sufficient interest not only at Cambridge, where the ground was laid by Bedwell, but also at Oxford where Matthias Pasor, Professor of mathematics and theology from Heidelberg, found a highly receptive environment to his proposal of introducing Arabic lectures. Those who gave support were not only theologians and physicians, but also mathematicians (such as Henry Briggs and John Bainbridge) because of their interest in reading Arabic mathematical texts.

Arabic and Expansion of Europe

A significant factor in the development of interest in Arabic was commerce. The response of Christendom to the first Islamic expansion had been the Reconquista in the Iberian peninsula, and the Crusades. The great voyages of discovery in the fifteenth and sixteenth centuries, undertaken by the Portuguese, were initially a continuation of the same response, and against the same enemy. In the seventeenth century, the growing weaknesses of the Islamic world were concealed by the imposing might of the Ottoman Empire, which was still able to advance to the walls of Vienna (1683) and to maintain its hold over the greater part of Southeast Europe. The vital changes, however, in the real relationship of power had already taken place. Europe was stronger, not only militarily and technologically, but also economically. With the consolidation of the Portuguese, and later the Dutch and the English presence in both Asia and Africa, Islamic power was effectively encircled. In time, this encirclement (completed by the Russians along the northern boundaries), led to the reduction of the Muslim spice trade and its diversion into oceanic routes, controlled by the West. With the opening up of the trade routes, the Western merchants in the Middle East became increasingly numerous, wealthy, and influential enough to be able at times to control even policy and education. By the seventeenth century, the trade from the Mediterranean to the Baltic was already in the hands of the Dutch, who had set up the Dutch East India Company. Similarly, the English with their East India, Muscovy, and Levant Companies emerged as a major political and economic force with direct diplomatic relations with the Ottoman Porte. The resident embassy as an institution of permanent diplomacy was an earlier Italian innovation (1420-1530). It had arisen out of the Ottom
INTRODUCTION

expansion into Eastern Europe, with the necessity of exchanging emissaries, signing contracts, forming alliances. The new embassies, following the earlier Venetian and Genoese successes, established legations for purposes of trade which encompassed a much broader network than what was previously required for the Mediterranean. With this expansion, where diplomacy and trade were closely linked, the widespread use of Arabic from Morocco and Zanzibar, to India and Malaya was recognised. Arabic was a language which could be of enormous practical use for merchants and navigators for both overland and sea routes to India and beyond as well as for diplomatic purposes in translating official documents and letters from foreign rulers.40

THE LEVANT COMPANY

It is significant that the first fully accredited English ambassador to the Porte in 1583 was commissioned as a merchant, and not as a diplomat, or a scholar. William Harborne had first obtained, from Sultan Murad III, the written promise of a special protection, the capitulations, for English merchants which was confirmed by a charter in 1580/81.41 Originally licenced as the Turkey Company by Queen Elizabeth, it was renamed, on the renewal of its charter, as the Levant Company in 1590. The capitulations granted certain privileges to Christian states, allowing their citizens to reside and to trade in Ottoman dominions without becoming liable to the fiscal and other disabilities imposed on the Sultan’s non-Muslim subjects.42

This meant that, for the first time, facility of travel and a peaceful means of contact could be established with the Muslims, and particularly with the Arabic-speaking Christians of the Eastern Church. In contrast to what was limited in the earlier centuries to a handful of pilgrims to the Holy Lands, now scholars with specific interests (such as John Greaves, the Savilian Professor of Astronomy at Oxford) could go on ‘scientific’ expeditions; and purveyors of information (such as Francis Vernon, Fellow of the Royal Society) could travel, for no other reason than to satisfy their curiosity or ‘itch for rambling’.43

As the lynchpin in the English diplomatic and commercial representation in the Ottoman Empire, the Levant Company had a profound impact on the development and consolidation of English Arabic interest. With the increasing numbers of merchants, following the establishment of a permanent embassy at Constantinople, and consulates at Smyrna and Aleppo, to appoint chaplains of the Church of England at each of these places became desirable. These appointments were made by the Levant Company with the approval of the ambassador (who also drew his salary from the Company).44 From 1611 onwards, there was a regular sequence of chaplains, beginning with a Fellow of Trinity College Cambridge, William Ford, who arrived in the company of

THE AGE OF ‘ARABICK’

the new ambassador Sir William Pindar. Most of the chaplains, however, came from Oxford, rather than Cambridge. Most of them already had an interest in Arabic for theological reasons.45 Both chaplains and merchants acted as intermediaries to obtain materials and Arabic manuscripts for individual patrons.46 Chaplaincies served as a means of first hand information which was conveyed through correspondence, diaries and travel accounts. They also provided an opportunity for resident chaplains, such as Edward Pococke, to acquire proficiency in Arabic through native training. Pococke, however, who subsequently became the most distinguished orientalist of his time, was exceptional.47

A major consequence of these developments was the institutionalisation of the study of Arabic at university colleges and even at such schools as Westminster. The first chair of Arabic in England—set up at Cambridge in 1632, and followed by one at Oxford in 1636—was, however, nineteen years after the one at Leiden (1613) in the Netherlands. In Catholic countries such as France and Italy, Arabic chairs had already been established (Paris, 1535 and Rome, 1584) in the sixteenth century.48

The fact that the Cambridge chair of Arabic was endowed by Thomas Adams, a wealthy draper, persuaded by Abraham Wheeldon (1593-1654), its first incumbent, and the Oxford chair by Archbishop Laud is representative of the role of the cloth and the merchant behind its institutionalisation. Coinciding with University Reforms, Arabic was incorporated into the examination system as a philological requirement for the Arts Degree. The initially arid philological training, however, paid off under innovative figures such as Pococke. Instead of using the scriptures, Pococke introduced, for teaching purposes, a wide range of Arabic literary texts as well as bi-lingual translations. (Later Persian and Turkish came to be included as oriental languages.)49

In this context, it is worth quoting the letter which was sent to Archbishop Laud by the University of Oxford when Laud made the Arabic endowment perpetual in 1640:

You have greatly enriched the Bodleian-Laudian treasury, by importing Arabic to Oxford, but when this store of literature reached us, being confined to books it remained mute, being restrained by its unknown characters; but when a stipend was attached as a key, with a lecturer to unlock the learning of Barby, the tongue was loosed. Even so it was not made immortal, as it hung on the single thread of your existence, which we hope indeed may be immortal. Then this difficulty was remedied by your entire munificence, an annual rent from your ancestral lands being conferred upon it. Your patronage of the Arabic language far surpasses the wealth of Arabic; being Arabized by you we must necessarily be either happy Arabians or rocky Arberians; happy if we yield due obedience to your mandate, but otherwise story and asid.50

Expectations of immortality proved to be much more realistic for Arabic than
for the fragile 'thread' of the Archbishop's existence. With the Professorships set up to continue in perpetuity, both at Cambridge and Oxford, Arabic became independent of the waxing and waning of interest. It was for this reason that in spite of the execution of Archbishop Laud and the pressures of the Interregnum, when Parliamentary 'visitors' attempted to remove the Arabic and Hebrew Professorships from Pococke, because of his staunch Royalism, they did not succeed. Arabic could survive, even when student numbers dwindled after the brilliant era of Pococke's scholarship during which Oxford had become a magnet for Continental scholars.

Without qualification, one could say that Arabic as an academic discipline is the achievement of the seventeenth century. Its establishment marks the beginning of an historical perspective and a dispassionate study of a subject which for centuries had been the object of emotionally-charged polemical diatribes. Pococke's *Specimen historiae Arabum* (1650) is a remarkable example. The brief account of the early history of Islam in the thirteenth-century chronicle of Bar Hebraeus, is expanded from the original fifteen to three-hundred pages with Pococke's own notes and detailed comments. Based on more than seventy Arabic manuscript sources, going back to the ninth century, *the Specimen historiae Arabum* has rightly remained an authoritative source for Arab history and Islamic institutions.

The fact that, in the face of religious intolerance and deeply ingrained prejudice, a detached inquiry into Arabic culture could emerge is a measure, more than any other area, of the fundamental change in the social and intellectual outlook of the period. This 'second wave' of 'Arabick' interest was lost to historians perhaps because it was not an epistemological influence in terms of 'new' knowledge. It was a product of the reworking of the intellectual position of a society in flux—poised between the 'ancients' and the 'moderns'—and a confirmation of their complex aspirations. As such, this Arabic interest is all the more relevant to our understanding of one of the most critical periods in the history of Western thought and of the development of its secular academic institutions.

The fourteen chapters, which constitute the present volume, clearly underscore this fundamental point in different areas of expertise. *P.M. Holt* briefly outlines the background to 'organised Arabic studies' in England, its connections with France, Italy, and the Netherlands; and its emergence, after an initial dependence on the grammars and textbooks printed in Leiden, as a centre of Arabic scholarship. Using the content of the lectures and orations of the leading Continental and English figures, *Holt* summarises the key arguments in support of Arabic which were in circulation. He brings out the importance of Pococke's appointment as a turning point for the future of Arabic studies at Oxford which, in its teaching, collection of manuscripts, and the printing of books, surpassed Cambridge. In addition to his scholarship, Pococke's innovative teaching methods—with a definitive curriculum, based on a variety of original sources (and not the Qur'an alone), using bi-lingual texts—produced a generation of well-trained Arabists and set the standards for subsequent centuries.

The paradox of the seventeenth-century Arabick interest is nowhere better illustrated than with the Fellows of the Royal Society. *M. B. Hall* shows that the wide-ranging interests of the 'weilders of the scientific revolution' included Arabic:

> At first thought, it seems unlikely that the Fellows of the Royal Society, founded in 1660 by the leaders of the 'new philosophy' in England for the promotion of natural knowledge, self-confessedly forward-looking modernists, should have concerned themselves with Arabic learning. That they did so throws further light both upon the complexities of the scientific revolution as well as upon the growth of Arabick studies in late seventeenth-century Britain.

Their 'unlikely' interest is revealed through Oldenburg's diligently kept records of the Royal Society (1653/54-1687), which appears to have been a clearing house of queries of all kinds on 'Arabick matters'. Using their correspondence, *Hall* gives an account of how the Arabic interest of the natural philosophers mirrored their omnivorous attitude to knowledge, which ranged from the theological, philosophical and scientific topics to the popular, practical, and the utilitarian; how close-knit the community of Continental and English oriental scholarship was; how much they hoped for from Arabic sources; the variety of channels they exploited to gain manuscripts and information; and above all, the importance of the English for Arabic studies.

A. *Hamilton* argues that what paved the way for the interest in Arabic was also the sympathetic attitude of the Anglican Church to the eastern Christians, particularly the Greek Orthodox Church; and that it was encouraged by theologians, actively continued by Arabists, such as Bedwell (who gave it as one the main reasons for the study of Arabic), Pococke, and others. It was this concern with the eastern Churches as well as with biblical studies which prompted Lancelot Andrewes to patronise Bedwell, in his efforts to introduce Arabic studies into England. Moreover, *Hamilton* brings out the fundamental difference, in the approach to Arabic-speaking Christians, between the Roman Catholic Church (which was proselytising in its aim for a union) and the Protestant, particularly the Anglican (which was scholarly in its interest). The Anglican theologians were attracted, in their attempt to justify the existence of the English national Church, by the example of the independence of the eastern Orthodox Churches from Rome. He assesses the role of the Aleppo factory and the extent of Anglican knowledge of the eastern Chris-
INTRODUCTION

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while occupying the chair. The result was a highly qualified body of professors who were content not to be hired elsewhere. Secondly, Arabic was seen essentially within a broad humanistic framework of the study of theology based on philology. It was for this reason that the Laudian statutes stipulated that all bachelors of arts (including medicine) attend weekly Arabic lectures. Against this background, the role of 'Arabick' becomes of major significance in the evolution of the English university as a secular academic institution for both instruction and research.

By investigating the extensive manuscript sources, which were used by the mathematicians and astronomers at Oxford and Cambridge, R. Mercier is able to identify their research. He shows that the Savilian Professors of Astronomy were not only interested in gleaning information out of the Arabic astronomical texts; they wanted to check the data in those manuscripts against their own observations by actually going to the lands where the readings were originally taken, and with similar instruments especially made for that purpose. Secondly, their use and study of the available Islamic manuscripts—geographical tables, star catalogues, and calendars (as in the exemplary study of Ulugh Beg’s calendars by John Greaves)—were directed to specific problems. In publishing star co-ordinates, for example, they brought together a considerable number of sources—(which required linguistic skills beyond that of Arabic to include Greek, Persian, and Ottoman Turkish)—in order to determine the constancy and variability of solar properties. Thirdly, they were looking for specific manuscripts in their attempts to restore corrupt Latin texts according to Greek sources that were extant only in Arabic.

G. Molland focuses on the Savilian Professors at Oxford and their monumental projects of preparing comprehensive editions of mathematical texts in Arabic. Irrespective of whether they were acquainted with Arabic (as in the case of Edward Bernard, John Collins) or not (as in the case of John Wallis, David Gregory, Edmund Halley), they had one specific objective. Although these scholars knew the significance of Arabic in the development of methods of numerical computation and algebra, the driving force behind their concern was the recovery of Greek mathematics with the aid of Arabic. Molland finds this exemplified by Bernard’s ambitious scheme of publishing, in fourteen volumes, virtually all extant Greek mathematics (a substantial amount of which was preserved only in Arabic); and by Halley’s completion of *Conics* of Apollonius. Molland thus presents the interest in Arabic mathematics as a ‘limited lure’.

W. Newman brings to light another area of the Arabick interest: Islamic tradition of alchemy and the alchemical practices of the natural philosophers. He examines four versions of a medieval forgery, *Summa perfectionis*, based on the Latin translation of an eighth-century Arabic work (Kitāb al-mulk) from the classic Jābirian collection. He argues that the popularity of this pseudo-Ḥārîonian medieval work was engineered by giving it a royal pedigree of Arabic origin. It was translated into English by Richard Russell (1678) and appeared in three other versions, two of which by iatrophysicians, under different pseudonyms; and one version in 1650 by William Starkey, a member of Samuel Hartlib’s scientific circle, who was associated also with Boyle and Boyle’s chemical experiments. He was even known to Newton, who owned a copy of Starkey’s *Secrets Revealt‘d*. Each of the versions reflects the particular interests of their seventeenth-century authors, and receives emphasis accordingly: corpuscular theory of matter, iatro-chemical practice, principles of alchemical transmutation, and the interpretation in relation to Neoplatonism which was of great interest to a number of Cambridge scholars.

At a time when alchemy was being practiced by no less an illustrious figure than Newton, that a Latinised Arabic Geber would serve as a title for forgeries, corroborates the strength of interest in Arabic and the aura of its prestige as a language in which ‘knowledge was locked’.

A. Wear argues that in medicine there was only a vestigial interest in Arabic; and that unlike the Continent, where the scholarship of humanist medical writers preserved the Latin tradition of classical Arabic medicine, the English emphasis on the vernacular, created a ‘national’ approach and a preference for English medicine. Furthermore classical Arabic medicine, caught up in the controversy of the ‘Galenical-Chymical’ physicians, was rejected along with the Latinised Galenic teaching. (Ironically, however, it was the ‘chemistry’ of Arabic alchemy (al-khimy) and its experimental tradition which was at the root of the iatrochemistry of the seventeenth century). At the same time, it was already absorbed into the practice and therapeutics of the seventeenth-century popular medicine. Wear concludes that Arabic medicine was part of the lifeblood of medical learning and that only when it was replaced by new approaches and theories that interest in Arabic re-emerged—this time as a subject of historical study.

One of the Royal Society’s recurrent aims, which M. B. Hall brings out, was the compiling of a ‘universal natural history’. Its many subjects included geographical, quasi-archaeological (local customs and beliefs) and botanical material for which ‘Arabick’ became relevant. Residents in the Middle East, travellers, chaplains to the Levant Company, consuls, ambassadors, surgeons were all asked for information. J. Harvey shows that in procuring this information, such men became interested in a variety of plants and bulbs, and actually sent samples (alongside Arabic manuscripts) which became established in English gardens. The fact, these plants were competing with those from the Americas is revealed, for example, in books by such figures as
Sir Thomas Browne, written for John Evelyn. Harvey provides the background which led to the founding of the Sherardian Chair of Botany at Oxford by William Sherard, who made use of his botanical training in his position as consul, then as ambassador to the Porte in Constantinople. At the same time, Harvey briefly traces the seventeenth-century interest in "coronary" flowers back to the medieval period.

G. A. Russell focuses on the impact of the Latin translation of the twelfth-century Arabic narrative, Ḥāyy ibn Yaqẓān, entitled the Philosophus autodidactus. She shows how its bi-lingual edition, published at Oxford by the Pocockes, father and son, became a major literary event both on the Continent and in England. The Latin version of this unique work served as a catalyst for the "new philosophy" based on 'experience and reason', as opposed to Cartesian 'innate' ideas. Most significantly, Russell documents the complex circumstances of its direct impact on John Locke, through his close association with both Pocockes at Christ Church, and on the preparation of the early Drafts of Locke's Essay on Human Understanding. The discovery of Locke's acquaintance with the 'philosophus autodidactus' throws light on an unknown aspect of Locke's intellectual development. In addition, Russell also brings out the decisive role of the Arabic work in the formulation of the Quaker manifesto by the leaders of the Society of Friends.

With these essays, the present volume establishes not only the pervasive presence of a "second wave" of Arabic in England, but also shows this multifaceted interest to be a critical component of the evolution of seventeenth-century thought, and a significant factor to be considered in the development of English academic and social institutions. By unravelling this unexpected strand in the complex skein of activities of the natural philosophers, it also opens new lines of investigation which may pose a further challenge to the accepted historical interpretations of the period.

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**Notes**


3 For example, Arabic is not included even in studies whose stated aim is to provide an integrated view of history by placing classical explanations in theology, politics and science within their social context, and with reference to a wide spectrum of topics; see T. The Intellectual Revolution of the Seventeenth Century, ed. Charles Webster (London/Boston: Routledge and Kegan Paul, 1974), pp. 2-3; and C. Webster, *The Great Inversion: Science, Medicine, and Reform 1625-1660* (London: Duckworth, 1975).


5 This position, though still highly influential, has been under critical examination with the increasing contextual approach of recent scholarship. For a review, evaluation, and bibliography of the shifting ground of historical approaches, see, D. C. Lindberg, 'Conceptions of the Scientific Revolution from Bacon to Butterfield' in *Reappraisals of the Scientific Revolution*, eds. by D. C. Lindberg and R. S. Westfall (London: Cambridge University Press, 1990), pp. 1-26. "Arabic" interest does not figure in the essays as part of the 'reappraisal'.

6 Bacon states that between antiquity and his own, 'the intervening ages of the world, in respect to any rich or flourishing growth of the sciences, were unspacious. For neither Arabians nor the Schoolmen need to be mentioned, who in the intermediate times rather crushed the sciences with a multitude of treatises, than increased their weight.' Bacon, *New Organon, Works, trans. J. Spedding, R. Ellis, and D. Heath new ed.* (New York: Hurd & Houghton, 1870-72), 4:77; see, Lindberg, 'Conceptions of Scientific Revolution' in *Reappraisals*, pp. 4-5.


8 Since the symposium in which the essays of this book took shape, M. Feingold, one of the original participants, has written on 'The Oxford Oriental School' in *The History of the University of Oxford* Forthcoming.


10 At the same time, however, Arabic was also the medium of the Qur'an and of a religion, the existence of which was profoundly disturbing to Christendom. To deal with the threat it presented, there were isolated and short-lived attempts to learn the language for the sole purpose of confuting the Qur'an and converting the Muslims. Although these were not implemented, the 'missionary' argument for the study of Arabic continued in the seventeenth century. See, Johann Füll, 'Die arabischen Studien in Europa vom 12. bis in den Anfang des 19. Jahrhunderts' in *Beiträge zur Arabistik, Semitistik und Islamwissenschaft*, eds. R. Hardtmann and H. Scholl (Leipzig: 1944), pp. 100-106.


12 For the implications of this questioning of religious authority, see *God and Nature: Historical Essays on the Encounter between Christianity and Science*, eds. D. C. Lindberg, R. Numbers (Los Angeles: University of California Press, 1986); also J.
INTRODUCTION


In a divided Christendom, the position of the English Church was defined against violent controversy between Anglican teaching and Calvinistic Puritan reforms where the common ground was anti-Roman Catholic polemics. Against this background, it is significant that the foundation and endowment of the chairs of Greek and Hebrew at Oxford was confirmed by Henry VIII. See H. Trevor-Roper, *Archbishop Laud 1573-1645* (London/New York: 1965), p. 281.

For example, William Tyndale’s English translation (1525-35) of the Old Testament was based on both Greek and Hebrew sources.


Robert Jones, *The Mediæval Oriental Press (Rome 1584-1614) and Renaissance Arabic Studies*, *Exhibition leaflet at SOAS* (May-June 1983); also ‘The Arabic and Persian Studies of Giovano Battista Raimondi (c.1536-1614)’ (University of London, Warburg Institute, Ph.D. Thesis, 1981). Even as late as 1669, the motivation, for example, behind the preparation of Castell’s *Lexicon Heptaglotton* was still for biblical studies.

Bedwell is a good example; see, Hamilton, *Bedwell*, ch. 4, especially pp. 66-69.

This illustrates the close contact between the community of scholars. Born in Lebanon, Gabriel Sosainas had studied at the Maronite College and taught oriental languages in Venice and Rome before moving to Paris as Professor of Arabic. His pupils included Pasor, the Professor of Mathematics from Heidelberg, who stimulated Arabic interest at Oxford, and Erspweis, the celebrated Dutch Arabist, who also had lessons from Bedwell; Pococke met Sosainas on his way back from Constantinople. Holt, *Studies*, p. 24; Johann Fich, *Die arabischen Studien*, pp. 141; 157-8.


For an overview and analysis, see G. A. Russell, *The Emergence of Physiological Optics* in Basden and Moreton, *eds, Science in Islamic Civilization*; forthcoming.


*For titles and dates see, *Arabic Science in Western Europe*, *Exhibition List of Books and Manuscripts* drawn from the Wellcome Institute Library for the history of Medicine (1987), pp. 8-12.*

The first *Giunta* edition of 1564 was published in Venice by the editors G. P. Mongiò and G. Costanza, both of whom were medical men. The second edition was greatly enlarged by corrections of Cremona’s version against Alpago’s with a detailed commentary which summarised previous discussions of the text. It marks a high point of Renaissance scholarship. See the Wellcome Institute Exhibition List, p. 10.


See H. Friedenwald, *Aanus Lusitanus*, *Bulletin of the Institute for the History Medicine*, 5 (1937), pp. 603-53. In the seventeenth century, these textual criticisms, in fact, stimulated physicians to learn Arabic. For example, Peter Kirèns (1575-1640) printed a part of the Canan in Arabic with an accompanying glossary to facilitate the study of the text. See, Hamilton, *Bedwell*, ch. iv, pp. 72-73 and 146.


On the whole, however, consulates relied on resident minorities, such as the Greeks as interpreters, rather than training diplomats.


J. B. Pearson, *A Biographical Sketch of the Chaplains to the Company Maintained at Constantinople, Aleppo and Smyrna* (Cambridge, 1883).


See Norman Daniel, Islam and the West, the Making of an Image (Edinburgh, 1960). The complex attitude of the seventeenth century is reflected in two works on Islam: Henry Stubbe’s *An Account of the rise and progress of Mahometanism with the life of Mahomet and a vindication of him and his religion from the calumnies of the Christians*, and Humphrey Prideaux’s *The true nature of imposture fully display’d in the life of Mahomet*; With a discourse annex’d for the vindication of Christianity from this charge. Offered to the consideration of the Deists of the present age. See P. M. Holt, *A Seventeenth-Century Defender of Islam: Henry Stubbe (1652-76)* and his Book (London: Dr. William’s Trust, 1972), p. 9; 29; idem, *Treatment of Arab history by Prideaux, Okley and Sale* in *Studies*, pp. 50-63.


Hall, ch. viii, p. 146, below.

For county connection in the promotion of Arabic studies, see P. M. Holt, *An Oxford Arabist: Edward Pococke* in *Studies*, p. 25.