

ABSTRACT

Maróth Miklós, *Teaching Greek and Arabic Sciences in Islam* pp. 3-14

In medieval Islam religious sciences were subsumed by the concept of 'ilm (science, *έπιστή η?*), whereas the concept *ma rifat* (learning, *παιδεία?*) subsumed all the other (or foreign or Greek) sciences. The two domains of scholarship had two different types of institutions: the former ones were studied in *madradas* connected to mosques; the latter ones in hospitals (*bimarestan*). *Dar*, *bait* etc. were neutral names, because they could serve as institutes for both kinds of learning. Religious and foreign sciences had two different systems of education. Students of religious sciences learnt the books of a master, who gave his best pupils *licence* of teaching (*ijazat*) his book, who in turn authorized their pupils, and so on through generations from the author of the book until its latest teacher. In foreign sciences master-pupil was, due to the ancient tradition, more similar to father-son relationship. Proponents of religious studies always frowned on students of foreign sciences, who were sometimes in danger, sometimes tolerated by religious leaders, but never in favour. In countries converted later to Islam the introduction of religious scholarship meant the attachment of the learned class through the line of licences their attachment to a tradition coming from Arabia, forgetting their own national traditions.

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José Chabás, *Episodes on the Diffusion of Arabic Astronomical Tables in Europe*
pp. 15-24

This paper provides a few examples of the transmission of several Arabic sets of astronomical tables originated in early Islam. Some of them soon reached al-Andalus, the part of the Iberian Peninsula under Muslim rule, where they were recast and adapted, and then diffused first to France and Italy, and later to the rest of Latin Europe.

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Ahmed Djebbar, *Les mathématiques arabes et leur circulation dans l'Occident latin* pp. 25-44

The study deals with three aspects of the Arabic mathematical tradition that has been nourished by some of the Greek and Indian corpora before prolonging and enriching it. The first aspect concerns the content of this pre-Islamic heritage and its role in the development of a new scientific tradition, expressed, in the first phase of its history, mainly in Arabic, then in other languages practiced in certain regions of the Muslim space, such as Persian, Hebrew and Turkish. The second aspect relates to the different orientations of mathematics recorded within the framework of the scientific activities of Islamic countries, with the enrichment of ancient Greek disciplines and the development of new chapters, such as the Arithmetic, Algebra and Trigonometry. The third aspect concerns the partial circulation of the two components of this mathematical tradition: the Indian and Greek mathematical corpus available in Arabic and part of the Arab production of the 9th-14th centuries.

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Marc Moyon, *L'appropriation des sciences géométriques arabes en Occident médiéval* pp. 45-68

The focus of this study is the appropriation, by European scholars, of geometric knowledge from Islamic countries. Firstly, we explain the way in which the discipline developed by Arabic-speaking geometers was primarily based on Greek and Indian traditions. In order to do this, we have outlined five geometries: European, Archimedean and spherical geometries and geometry of conics and measurement. We thus show the various geometrical orientations favoured by the authors who flourished in Islamic countries, as well as their originality. Secondly, we pay particular attention to the European geometrical landscape before the advent of Arab knowledge and know-how which became gradually available from the tenth century onwards. Finally, we show to what extent Latin scholars (and to a lesser extent, Hebrew scholars) appropriated the geometric corpus available in Arabic, mainly through translations. After the twelfth century, Latin scholars acquired geometric texts enabling them, in their turn, to develop European geometrical science, which was essential in the university context of the quadrivium.

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Charles Burnett, «*Arabica veritas*»: *Europeans' Search for «Truth» in Arabic Scientific and Philosophical Literature of the Middle Ages* pp. 69-86

This article explores the use of the phrase «*Arabica veritas*» in Medieval and Renaissance Western literature, and considers what might be meant by «*Arabic truth*»? The article touches upon the attitude of western scholars to Arabic texts, to literacy in translation, and a truth which lies beyond the words of the source and target languages, and ends by showing why Arabs in particular should be thought to preserve the truth.

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Sébastien Moureau, *Min al-Kimiya' ad Alchimiam. The Transmission of Alchemy from the Arab-Muslim World to the Latin West in the Middle Ages* pp. 87-142

This article is the first study entirely dedicated to the transmission of alchemy from the Arab-Muslim world to the Latin West in the Middle Ages. Its first part is an analysis of the concept of alchemy in the Arabic tradition and in the Latin literature of the twelfth and thirteenth centuries in order to stress the elements of doctrine that passed from one cultural area to the other. The second part of this article is a commented list of the alchemical Latin texts that are, could be, or pretend to be translations from the Arabic. The article also presents some new discoveries among which two are of special importance: the identification by the author of the Arabic original of the *Liber ad filium suum* of Alphidius (Asfidiyus), and the identification by Marion Dapsens and the author of the Arabic original of a short Latin text attributed to Prince Khalid b. Yazid.

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Jean-Patrice Boudet, *The Transmission of Arabic Magic in Europe (Middle Ages - Renaissance)* pp. 143-66

Thirty years after the founding article of David Pingree, it is time to try to synthesize the recent works and to propose a new interpretation of the phenomenon constituted by the diffusion of Arabic magic texts in the Latin West. This paper takes first into account two main reference bibliographies: that of the *Speculum astronomiae*, written in the middle of the XIIIth century by an anonymous author falsely identified with Albertus Magnus, and that of the *Antipalus maleficiorum*, written in 1508 by Johannes Trithemius. Thanks to the lists of the *Speculum* and of the *Antipalus*, we arrive at a provisional total of 54 texts and magic treatises translated or at least partially adapted from Arabic into Latin. But it is possible to draw up an additional list of 19 texts and treatises of this kind which are not mentioned either in the *Speculum* or in the *Antipalus*. We thus arrive at a total of

ca. 73 texts translated or adapted (at least partially) from Arabic. Of these 73 texts, it can be estimated that 60 survive in Latin or Spanish versions, whereas in the current state of research only five of them are preserved in their original language. We can therefore measure the extent to which the Latin and Castilian translations of these texts are testimonies of a major importance (even if they are indirect) for the history of magical literature in the medieval Arab world, and the strategic importance of these translations. As to the nature of the texts concerned, it is clear that the great majority of them belong to astral magic, which represents some 59 texts of 73, an astral magic of pagan origin, partly following the tradition of the Sabaeans of H. arrān, little Islamized and therefore more easily transmissible despite the danger of idolatry it represented for the Christian world, on the condition of being the object of a more or less clear censorship as the case may be. But a more complicated situation can be observed in other magic treatises like the *Liber Bileth*, mainly because of the contamination between Arabic, Jewish and Christian magic in the Late Middle Ages. The problem of the nature of the transmission of Arabic magic in a Christian environment is therefore rather complex and it is also the case for their reception that does not have to be the object of cut-and-dried judgments.

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Bruno Laurioux, *The Spices and the Transmission of the Arabic Culinary Knowledge in Europe* pp. 167-90

The hypothesis of Maxime Rodinson and Toby Peterson that links the using of spices in Latin Western cookery during the 14th and 15th c., with the influence of Islamic civilization has been contested by subsequent works which have shown a progressive inner evolution between Late Antiquity Cuisine to Late Medieval Cuisine. This paper aims to re-examine the issue from the oldest documents that we have: first, cookbooks from Al-Andalus as well from Latin Europe dating back to the 12th c.; second, the earliest translations of Arabic medical works dealing with spices; third, some precious accounts of 12th c. preserved in Catalonia and England. The questions concern: first the places of transmission (Spain,

the Norman World from South Italy to England and the Crusaders states in the Near East); second, people who ensure the transmission (physicians, merchants, eaters); third, the products (sugar, Far East spices and perfumed ingredients as camphor).

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Alexander Fidora, *The Arabic Influence on the Classification of Philosophy in the Latin West: The Case of the Introductions to Philosophy* pp. 191-210

This article analyzes the influence of the Arabic divisions of the sciences on the so-called «Introductions to Philosophy» – a literary genre from the middle of the thirteenth century in which the masters of the young faculty of Arts in Paris present their programmatic definitions of philosophy and its distinctive parts. As is shown, these texts were strongly dependent on the Farabian division of philosophy as it was transmitted through the translations and works of Dominicus Gundissalinus. Thus, al-Fa-rā-bī and Gundissalinus clearly framed the masters' reading of the Aristotelian corpus, particularly the books on logic and natural philosophy, while they also provided fundamental epistemological categories that allowed for both horizontal and vertical subdivisions of philosophy and the disciplines it comprises.

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Joël Chandelier, *The Diffusion and Influence of Arabic Medicine in Late Medieval Europe: An Overview* pp. 211-26

Arabic medicine had a great influence on Western medicine: numerous texts were translated from the Arabic into Latin from the XIth to the XIVth century, some of them becoming textbooks in the universities until the

Renaissance. However, if the various stages of this diffusion are well known, several questions remain: How Arabic was the medicine the Latin physicians practiced from the XIIth to the XVIth century? Were the Western authors aware of the Arabic character of the works they used? To answer these questions, this article focuses on two approaches: a statistical one, studying the importance of Arabic texts amidst all of those possessed and studied by Latin physicians in university *curricula*, in their libraries and their manuscripts; and a subjective one, trying to understand to what extent Latin physicians considered the Arabic medicine they practiced as truly Arab, and how their attitude started to change towards the end of the middle ages.

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Iolanda Ventura, *On the Impact of Arabic Pharmacological Knowledge in Europe: The Example of Ps.-Serapion's Liber aggregatus de simplicibus medicinis* pp. 227-82

This paper deals with the notion of «impact» of scientific texts during the Late Middle Ages, arguing that this notion should be employed instead of the ideas of «reception» or «*Fortleben*» when we aim to put together a «dynamic history» of science and scientific literature. In order to corroborate this point, this paper focuses on some pharmacological and pharmacotherapeutical texts translated from Arabic into Latin during the second half of the Thirteenth century, and particularly on a successful collection of *medicamina simplicia*, the so-called *Liber aggregatus de simplicibus medicinis* attributed to the Ps.-Serapion, analyzing its manuscript tradition and use in contemporary medical writings, and stressing its impact on Late Medieval pharmacology, and particularly in the Academic milieu of Padua.

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Yomna T. Elkholy, *Ibn al-Haytham in Europe During Late Middle Ages and Renaissance* 283-98

The prominent Arab scientist al-Hasan ibn al-Haytham is supreme representative of the Golden Age of the Muslim civilization and her contribution in the history of science. His ample legacy has great influence in reforming optics, criticizing of Ptolemaic astronomy, developing of some geometrical issues and of infinitesimal mathematics, mathematization of physics and improving some of its central concepts. He led physics toward maturity and overstepping the Aristotelian paradigm. Through translation, ibn al-Haytham was well-known in Europe during late Middle Ages and Renaissance. His achievements in development of the physicalistic mentality and of physics motivated the European sciences in that epoch; so that he shared in laying foundation for the subsequent scientific revolution and Newtonian physics, as one of the foremost founders of modern science. I trace some factors which had made him competent to such great role, shedding light on dimensions of his gift to the physical mindset, such as his managing of both mathematics and experiment and his methodology.

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Danielle Jacquart, *The Survival of the Medieval Translations of Arabic Scientific and Philosophical Texts in Incunabula and Sixteenth-Century Printings* pp. 299-314

Contrarily to the most traditional historiographical view, the break between what are called respectively the Middle Ages and the Renaissance has not been so radical as it is often claimed and printing introduced at the end of the fifteenth century gave a new diffusion to medieval Latin translations from Arabic. The first part of this paper provides a selective survey of the translations which were printed at the very beginning, in incunabula, pointing out to the main features which had motivated these editions. In the second part, are given examples of printings during the sixteenth century, the years 1520-1530 marking a significant change

in the choices and editing methods. In the short and conclusive third part, it is alluded to the transmission of Islamic science through works written originally in Latin during the Middle Ages, which continued to be printed over years.

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