

There is one slight inaccuracy on page 29: although the study and Catalan translation of Ibn al-Samh's treatise on the astrolabe was published in 1986, the edition of the Arabic text is still unpublished. Evidently this is trifling point in such an impressive, wide-ranging study.

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Luis García Ballester, *Galen and Galenism. Theory and Medical Practice from Antiquity to the European Renaissance*. Ed. by J. Arrizabalaga, M. Cabré, L. Cifuentes, F. Salmón. Aldershot: Ashgate, 2002 (Variorum Collected Studies Series, CS710).

Little can be added to what has already been written about Luis García Ballester (1936-2000), either in obituaries or book-reviews concerning other posthumous publications, such as *Medicine in a Multi-cultural Society*, also edited by Variorum and reviewed by M. Forcada in the second issue of this journal. In the context of Spanish scholarship, perhaps it is worth noting that, for a long time before his disciples began to put into practice his teachings, Luis García Ballester was our most international scholar in the field of history of medicine. More importantly, as far as Islamic medicine is concerned, he was –and still is– the sole Spanish historian of medicine who has approached with scientific rigor a field of research primarily cultivated by philologists, physicians and native Arabic-speakers. In this particular area, he devoted himself to fill in the gap regarding Muslim and Jewish minorities in Spain, but his works on ancient and medieval medicine also contain a wealth of learned references to Islamic medicine, with which he always interacted when studying the Western medical tradition. Therefore, while regretting the loss of a scholar who constitutes a model for emulation, historians of medicine in general

–and historians of medieval Islamic medicine in particular– must celebrate the publication of this collection of essays on Galen and Galenism. Luis García Ballester pioneered research regarding subjects that had not been formerly studied in Spain, such as Galen, a medical author who attracted his attention for more than thirty years. Likewise, in tune with what was going on beyond our frontiers, he incorporated new approaches to, and new questions in, the history of medicine, which in the case of Galen mainly became a twofold aim: firstly, the effort to place the physician (and his scientific contributions) in historical context, and secondly, the purpose to explore his influence (the so-called Galenism) throughout time. This is what makes the book under review a particularly valuable reading for many historians of medieval Islamic medicine. On the one hand, it is an authoritative bibliography on Galen (the master-key for understanding Islamic medical theory and practice) and on Galenism (which cannot be understood without the role played by the Islamic medical tradition); on the other, it is also a source of inspiration, for our knowledge of medieval Islamic medicine would greatly benefit from an attempt to apply García Ballester's methodology and historiographic approaches.

The collection of essays is divided into two sections, devoted to Galen and Galenism respectively. The first work, *Galen's Medical Works in the Context of his Biography*, is a comprehensive chronological reconstruction of Galen's biography and literary production which comes out of –and summarizes– a lifetime of study. Starting with a well-reasoned synthesis about Galen's relevance and a description of his family background and beliefs, García Ballester offers a detailed survey of how Galen's ideas, discoveries and knowledge developed throughout his long life, and how the teachers he studied with, the medical schools of the time, the intellectual and professional context he met

at the places in which he lived, conditioned his subsequent research. The author's admiration towards Galen does not prevent him from mentioning, at least in passing, some less positive aspects of his personality, such as presenting some of his ideas as having been inspired by Aesculapius in a dream (in order to make his theories sacred and protected against criticism), or his arrogance, the latter often represented in quotations selected from Galen's works to illustrate his biography. In this respect, the present author only misses some reference to Galen's persuasive strategies embodied in his theoretical writings and case histories, as well as to the fact that many of Galen's claims regarding his superiority as a physician –however well founded and deserved– were also a means for the construction of his authority and for self-promotion, all of which passed on to the Islamic tradition.

The following work, *Galen as a Clinician: His Methods of Diagnosis*, provides a detailed analysis of Galen's work as a practising physician. García Ballester emphasizes how Galen developed Hippocratic doctrines, giving them a character decisive for the latter evolution of medicine. This is particularly important as regards diagnosis, since the major contribution of Galen to medicine consisted not only in applying the use of reason, but also in pointing to the site of the disease (regional diagnosis). Likewise, the typification of disease allowed him to practice the so-called "differential diagnosis", which is fundamental to therapy. The sections devoted to the concept of diagnosis and prognosis in Ancient medicine, the manner in which Galen resolved the tension between scientific knowledge and clinical experience, and the role which case histories played in his medical work, are followed by a description of Galen's methods of diagnosis through the senses (particularly the use of sight, touch and hearing), the word (namely, interrogation of the patient), analogy, and, more import-

antly, the combination of the use of reason, conjecture and experience. In this manner, García Ballester demonstrates that Galen's recognition of bodily symptoms in daily practice was much richer and subtle than the image of a doctor who only took the pulse and looked at the urine against the light, highlighting that this is a "plitudinous image of later Galenism".

In the third article, *Soul and Body, Disease of the Soul and Disease of the Body in Galen's Medical Thought*, García Ballester discusses the role of the psychic aspects of human nature in the medical system of Galen. This too is a particularly interesting work, not only because of the novelty of the subject and his approach, but also because he deconstructs another topos traditionally linked to Galen: while he is (like Avicenna) often associated with brilliant psychotherapeutic procedures to identify mysterious complaints –which he then diagnoses, for example, as lovesickness or anxiety– García Ballester maintains that Galen did not use that therapeutic technique and was never interested in formulating a doctrine on the soul-body relationship on which he might have based a strictly psychotherapeutic action. Moreover, Galen left rather vague the answer as to what kind of connection existed between soul and body. Leaving aside the fact that accepting the absence of a given feature in a particular physician or time-period is as historical as studying its presence, the apparent contradiction between Galen's case histories describing his own clinical experience with mental disorders and García Ballester's statement is resolved by means of a discussion of the notions and nature of the soul and disease in Galen. The answer seems to be that Galen's thought in this point worked at a purely medical –even pragmatic– level rather than at a philosophical one. The fact that he did not consider speculation on the soul, its substance and features, worthy of interest for the solution of the medical problems he encountered as a clinician, did not prevent

him from admitting connections between the psychic and moral life of man, whose alteration brings about disease of the soul, and bodily health, which depends on the good functioning and balance of what, in Galenic terms, constitutes the *physis* (elements, qualities, humours, faculties...). Although Galen did not state what these connections actually consist of, he nevertheless formulated basic therapeutic principles to treat illnesses of psychic origin. More importantly, as García Ballester mentions in passing, Galen made medicine the foundation of the physical, psychic and ethical life of man, therefore placing the physician and his activity at the top of all professional activities.

The fourth and last essay devoted to Galen, *On the origin of the "six non-natural things" in Galen*, deals with the origins of the concept that came to form one of the principal aspects of Galenism, for it constituted a substantial part of the causal and therapeutic system of Galenic pathology, while at the same time, all the preventive doctrine for the preservation of health was also built on it. The sixfold classification found by L.J. Rather in the work *Ars medica* was the basis for the first consideration of that doctrine in the historiography of Galenism. The contrast between the elaborate and over-refined concept in that treatise with its unsystematic presentation and lack of rigor when it occurs in Galenic works of undoubted authenticity led J. Kollesch to question the authorship of *Ars medica*, at least in the form in which it has come down to us. From this standpoint, García Ballester addresses two interesting issues: on the one hand, whether the concept of the "six non-natural things" is to be found in the works of Galen or was a subsequent elaboration of Galenism (Alexandrian, Arabic, and Latin Galenism); on the other, since Galen's thought changed during his life, and Galenism was not something static and defined from its very beginnings, at what moment in Galen's biography and at what

stage in Galenism such a precise doctrine developed. In order to answer those questions, García Ballester traces back Galen's passages in a number of works (including those preserved only in Arabic) to conclude that throughout his scientific career he appealed over and over to concepts which were subsequently systematized as "six non-natural things" by Alexandrian Galenism, and which were then taken over by Islamic authors.

The section devoted to Galenism is made up of a selection of seven essays, all of which, to a greater or lesser degree, convey a good deal of information regarding the impact that medieval Islamic medicine exerted on the Western medical tradition. The first article is entitled *The New Galen: A Challenge to Latin Galenism in Thirteenth-Century Montpellier*. In this essay, García Ballester analyses how the assimilation and eventual introduction of new texts in the traditional medical curriculum known as *Articella*—a collection of works of schematic and aphoristic nature and their commentaries—resulted in what he identifies with the "new Galen", an impressive *Corpus Galenicum* which provided university physicians with a better and deeper knowledge of Galenic physiology, clinical medicine and therapeutics. Focusing on the great European centre of Montpellier, he also examines how that movement began among university physicians in the middle of the thirteenth century, accelerated in the second half, and culminated with Arnald of Vilanova (ca. 1240-1311), whose singular role in the process is described by García Ballester in five sections: Arnald's extensive knowledge of Galen's works (attested by a detailed analysis of his private library and medical writings); his work in the university as commentator on Galen's most important new treatises; his contribution to the task of transmitting a new version of Galen; his direct knowledge of Arabic sources; and his personal involvement in drawing up the academic

regulations which governed medical studies at Montpellier from 1309 onwards.

The following article, *Artifex factivus sanitatis: health and medical care in medieval Latin Galenism*, focuses on the manner in which medieval Islamic medical treatises transformed the concept of health and disease in the Latin medical tradition, but it also addresses the question of how a medical model based on new medical concepts and a new conception of medical training became socially accepted after a lengthy process from the twelfth century onwards. Although universities played an important role, García Ballester shows that it was the introduction of Aristotelism through Arabic texts—in which Aristotelian doctrines had already been developed and integrated into a doctrinal system with practical medical implications—that allowed the influence of the physician trained in natural philosophy to increase in society and the most developed form of Galenism to enter the Latin West. According to García Ballester, the Latin translation of works such as al-Majūsī's *Pantegni* or Avicenna's *Canon* not only transformed the concept of health, but also endowed medicine with intellectual respectability, and in combination with university institutions, promoted the social demand of physicians as *artifex factivus sanitatis* or "makers of health".

In *The Construction of a New Form of Learning and Practicing Medicine in Medieval Latin Europe*, García Ballester builds on and expands subjects discussed in previous papers collected in this volume. Focusing on the southern parts of Latin Europe (namely, Salerno), he brings together nine factors which, in his opinion, intervened in the construction of a new medical paradigm throughout the thirteenth and fourteenth centuries. These factors range from translations—or commentaries—of particular groups of works progressively incorporated into the medical curriculum, up to the existence of universities and academic physicians shaping—and

marketing—a new form of understanding and practicing medicine. Put in a different way, García Ballester dissects the interaction of conceptual, intellectual, and social features involved in that process (a number of which were filtered through the translations of Arabic medical works), and his essay provides a rich insight of medicine in the Latin West.

By analysing the views propounded by Arnald of Vilanova and Bernard de Gordon, in *La recepción del Colliget de Averroes en Montpellier (c. 1285) y su influencia en las polémicas sobre la naturaleza de las fiebres*, García Ballester tries to show that Averroes's rational understanding of fever served as a starting-point for the reflexions which, on that particular topic, followed the *Colliget's* reception in the medical-scholastic circles of thirteenth-century Montpellier. The next article, *La fiebre y las doctrinas de las cualidades y de los grados, según Arnau*, analyses Vilanova's concept of fever throughout his works (*Aphorismi de gradibus*, *Commentum*, and *Speculum*). Since Arnald of Vilanova's doctrine of degrees of compound drugs was a revolutionary novelty in the medical environment of his time, García Ballester's purpose is also to find out whether a parallel doctrine is to be found in his works as regards the mathematical quantification of fever.

*Galenism and Medical Teaching at the University of Salamanca in the Fifteenth Century* fills in an historiographical gap. In this article, García Ballester examines recently discovered documents to attempt a reconstruction of medical theory, practice and academic teaching programmes at the university of Salamanca, a matter scarcely explored until then. Two students' notebooks and a collection of texts copied by a Salamanca medical graduate (preserved at the Biblioteca Nacional of Madrid and the Real Academia de la Historia) allow him to gain an insight into the intellectual environment of that Castillian institution.

Nevertheless, the study is not a simple description of the manuscripts's contents meant merely to show the questions that concerned the medical community of Salamanca, but an analysis of the intellectual tools with which those questions were approached. For that purpose, García Ballester focuses on three particular issues: al-Kindī's (d. 870) doctrine of degrees transmitted to the West by Arnald de Vilanova; new diseases, as reflected in the students' notebooks; and the intellectual stimuli exerted by Avicenna's *Canon*, whose commentary opened up the possibility of expounding personal opinions and experience or of reconsidering medical problems in the light of the intellectual developments of the moment.

The title of the last essay included in the volume will be particularly appealing to historians of Islamic medicine: *The Circulation and Use of Medical Manuscripts in Arabic in 16<sup>th</sup> Century Spain*. This article complements the author's discussion of the reasons for the survival of medical manuscripts in Arabic during the 14<sup>th</sup> and 15<sup>th</sup> centuries in the Christian zones of Spain, included in García Ballester's *Historia social de la medicina en la España de los siglos XIII al XVI*. It is divided into three sections, the first of which examines three broad topics in connection with the complex relationship between Arabic medical literature and medical humanism: the knowledge of Arabic language as a determinant condition for gaining direct access to the writings of classical Islamic authors; the confrontation of Humanistic Galenism with Arabized Galenism through the prism of Avicenna's *Canon*; and the potential recovery of Greek medical sources through Arabic medical manuscripts. The second section deals with the use of Arabic medical manuscripts as a source of medical knowledge within the Morisco community. The third part explores the factors that slowed down and interrupted the circulation of Arabic med-

ical manuscripts in 16<sup>th</sup> century Spain.

The scholars responsible for the selection of essays in this volume have achieved a sound and useful choice of García Ballester's works, some of them being his own revised versions of articles formerly published in Spanish. As a whole, the studies assembled here provide a representative sample of his research on the history of Galen and Galenism, down to its death throes within the Morisco minority in 16<sup>th</sup> century Spain. The interest and usefulness of the collection is enhanced by the incorporation of the author's impressive list of publications, which—with an index of persons, writings, places and institutions—brings the volume to a close, and will lead the reader on to discover García Ballester's other historical contributions. Anyone seriously interested in the broad question of what Europe owes to medieval Islamic civilization, particularly as regards medicine and science, will find much of the answer in his writings, here and elsewhere but that is not all: they will also find new questions raised for future historians of Islamic medicine to pursue.

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Folkerts, Menso *Essays on Early Medieval Mathematics: the Latin Tradition*. Aldershot etc., Variorum, Variorum Collected Studies Series 751. IX + 353 pp.

This book consists mostly of reprints of articles that had been published previously. Some of these articles were originally written in German but appear in English translation in this volume. Folkerts added a name index and an index of manuscripts for all the articles which are contained in this book.

Most of the book is devoted to the development of mathematics in medieval Europe before the twelfth century, that is to say, before the massive transmission of science from the Islamic world to Christian Europe really began. At first sight, the book