
Review

Reviewed Work(s): The Optics of Ibn al-Haytham, Books I-III: On Direct Vision by Ibn al-Haytham and A. I. Sabra

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True, given the lucidity of O'Meara's prose, his summary offers a good and accurate introduction to the text. But this approach has two significant disadvantages. In fidelity to his author, O'Meara also preserves all his digressions and redundancies. More serious still, in declining to shed any light of his own on the notorious difficulties in this text, O'Meara deprives the reader of the wealth of his own learning and perspicacity, so much in evidence elsewhere in the book. Why O'Meara abandoned the duty to interpret and explain, in this most critical segment of John's *oeuvre*, is a mystery. We are the poorer for it. His choice is all the more regrettable given the place of prominence in the Eriugena literature that this book decidedly deserves and will undoubtedly receive.

MARCIA L. COLISH

Avicenna. *Liber tertius naturalium: De generatione et corruptione: Édition critique de la traduction latine médiévale et lexiques.* Edited by S. van Riet. Introduction by G. Verbeke. (Avicenna Latinus, 6.) vi + 86 + 336 pp., apps., index. Louvain: E. Peeters; Leiden: E. J. Brill, 1987.

This study of the *De generatione et corruptione* is the sixth volume to appear in the collection *Avicenna Latinus*. The structural format adopted in the initial volumes in this series is continued here. The book is divided into three sections: an introductory summary by G. Verbeke on Avicenna's views, the edited text and commentary by S. van Riet, and a third section containing Arabic-Latin and Latin-Arabic lexicons. This treatise comprises the third book in the natural philosophy portion (*al-ṭabīʿyyat*) of Avicenna's *Shifāʾ*. It was translated into Latin between 1275 and 1280 in Spain by Jean Gonsalvez de Burgos and a Jewish collaborator, Salomon. The *De generatione et corruptione* survives in a single manuscript dating from the fifteenth century, Vatican Library, Urb. lat. 186, described as richly ornamented and easily legible. As van Riet is dealing with a unique manuscript she is not able to present the usual critical apparatus but instead provides the text followed by her corrections, a comparison with the Arabic text, and a brief commentary. She also includes a dis-

cussion of her approach to and special problems encountered in editing the text.

Verbeke's introduction is a summary of the main themes found in Avicenna's *De generatione et corruptione*; the role of the four elements, atomism, growth and alteration, questions concerning potentiality and actuality, and the theory of latency are reviewed. He compares Avicenna's theories with those found in Aristotle's treatise bearing the same title and states that although they are concerned with similar topics, Avicenna's work is not merely a commentary. Even though these problems are explored in a primarily Aristotelian framework, Verbeke points out that Avicenna must take into account such religious tenets as divine providence, God as creator, and creation *ex nihilo*. For example, when the transformation of elements is presented, he introduces the agent intellect and the *Dator formarum* (*De gen.* 14) in this context. Verbeke also notes how Avicenna develops theories using new scientific information such as astronomical observations in his discussion of celestial influences.

For the student of medieval history and philosophy this edition is an excellent starting point for understanding Avicenna's influence in the Latin West. The problems found in the *De generatione et corruptione* are similar to those formulated in the standard *quaestiones* debated in the universities. The scholarly usefulness of the edition is enhanced by the lexicons, which make up a full third of the volume. For those who are unable to consult the Arabic text directly, it provides a bridge toward understanding how Avicenna was translated and assimilated.

KRISTIN E. PETERSON

Ibn al-Haytham. *The Optics of Ibn al-Haytham, Books I–III: On Direct Vision.* Translated and edited by A. I. Sabra. 2 volumes. x + 367 + cx + 246 pp., plates, figs., apps., bibl., indexes. London: Warburg Institute, University of London, 1989. £63.60 (UK), £65.90 (elsewhere).

The optical treatises of Ptolemy and Ibn al-Haytham (Alhazen) furnish curiously parallel illustrations of how a major scientific work can emerge from neglect by being transmitted to a different milieu. Ptolemy's

Optics left meager traces in Greek sources, and such readers as it had were scarcely competent to appreciate it; but shorn of its first part and translated into Arabic, it obtained in the eleventh century a select but intelligent readership including above all Ibn al-Haytham. In his own *Optics* Ibn al-Haytham broke with his predecessors in many respects, most importantly in his theory that vision takes place through the intromission of light rays into the eye and in his emphasis on the role of thought and judgment in visual perception; yet he chose to follow Ptolemy not only in plan and selection of topics, but also in the argumentative and experimental methodology that distinguishes Ptolemy from the more widely imitated Euclidean tradition of optics through axioms and quasi-geometrical theorems. Ibn al-Haytham's treatise in turn appears to have been little known in the Islamic world until its popularization in the late thirteenth century through a commentary by Kamāl al-Dīn al-Fārīsī. But already in the twelfth century there existed a Latin translation, perhaps by Gerard of Cremona or one of his circle. This version, lacking the critical opening chapters in which Ibn al-Haytham set out his doctrine of the radiation of light and color, became the single most important foundation of the optics of the Latin West.

The Latin version of the *Optics* has long been available through the intelligent 1572 edition of Friedrich Risner, although a modern critical edition remains a desideratum. The present translation by A. I. Sabra of books 1–3 is based on the first volume of Sabra's critical edition of the Arabic text, which was published in 1983 in Kuwait. The first three books concern direct vision, as distinct from the conditions and phenomena of reflection and refraction that make up the contents of books 4–7; hence the division of the whole treatise into these two parts, already made in the manuscript tradition, makes sense. In books 1–3 we have a self-standing theory of the manner in which visible formal properties of bodies are transmitted through the radiation of light rays and seen in the eye, and an investigation of the parts played by sensation, recognition, and inference in correct or erroneous perception.

Sabra has provided much more than a translation of Ibn al-Haytham's treatise. His long introduction chiefly concerns the

place of the *Optics* in Ibn al-Haytham's scientific production and the history of the text in Arabic and Latin. Of particular interest here are the parts surveying Ibn al-Haytham's other optical writings and discussing the scope of the *Optics*; these discuss, incidentally, the influence of Greek and earlier Arabic sources on Ibn al-Haytham, a topic also prominent in Sabra's commentary. Among other supplements, there are synopses of books 1–3, a well-laid-out index, and a concordance and Latin-Arabic glossaries to facilitate comparison with the Latin version (in passing, a note of gratitude that Sabra has not followed the too-common practice of putting off these aids until the completion of his project). The disposition of the book, with the translation alone in the first volume and introduction, commentary, and other editorial supplements in the second, is very convenient for the reader.

The translation fulfills the overriding obligation to be accurate and also has the merit of readability. Sabra has avoided the syntactic monotony common in literal translations from Arabic without sacrificing precision in rendering Ibn al-Haytham's words. Translator's glosses, indicated by brackets, are employed sparingly. Further clarifications of obscure points, textual remarks (pertaining to both the Arabic and Latin versions), and numerous cross-references make up the shorter notes of the commentary. Readers of the Arabic version should note that Sabra proposes a number of corrections to the text as published in his Arabic edition. The longer notes, especially those at the head of the books and chapters, largely concern general concepts and terminology, historical background, and the place of individual chapters in the plan of the whole treatise. The elucidations of Ibn al-Haytham's experiments are especially helpful.

The volumes are handsomely produced, and typographical errors are comparatively rare, in spite of the quantity of Latin and transliterated Arabic in the notes (one misprint in the translation, p. 27, line 29, "not" for "now," may puzzle the attentive reader). This valuable work of scholarship fills a gap in the resources of the historian of optics; and to readers lacking knowledge of Arabic or even a technical knowledge of early optics, it makes accessible one of the masterpieces of medieval science. The

translation of the remaining four books will be impatiently awaited.

ALEXANDER JONES

Adrien Pattin. *Pour l'histoire du sens agent: La controverse entre Barthélemy de Bruges et Jean de Jandun, ses antécédents et son évolution.* (Ancient and Medieval Philosophy, Series 1, 6.) xvi + 460 pp., bibl., index. Leuven: Leuven University Press, 1988. Fr 3,400.

The medieval problem of the agent sense has its roots in an analogy drawn by Aristotle between sensation and intellection. Given that the intellect has an active power that brings what is potentially intelligible to actual intelligibility, and a passive power that then grasps the actually intelligible, what are the analogous powers in sensation? Specifically, what is the power that makes a potentially sensible object actually sensible? Aristotle had claimed that sensed objects are not materially present to sense organs. Instead, "sense is that which is receptive of the form of sensible objects without the matter" (*De anima* 2.12.424a17–19). If that is so, then an object is only potentially sensible until its form can cross a medium separating the object from a sense organ. The power that makes an object actually sensible will enable the object's form to undergo just such a translation. In his commentary on *De anima*, Averroes suggested that the object alone was insufficient to cause such a translation of its form, and left his followers to discover where the cause of this translation lay. "And you should look into this," he wrote, "because it bears examination" ("Et hoc debes considerare, quoniam indiget perscrutatione": text 2:60).

This striking admonition did not go unnoticed in the thirteenth and fourteenth centuries, leading to questions in *De anima* commentaries and occasionally to treatises devoted exclusively to the question of whether natural philosophers needed to suppose the existence of an agent sense. Such questions continued to appear in *De anima* literature well into the sixteenth century.

In the present volume Adrien Pattin has collected twenty-one texts, many previously unpublished, bearing upon the question of the agent sense. The accompanying

commentary follows the outline of his article "Pour l'histoire du sens agent au moyen âge," which appeared in the *Bulletin de Philosophie Médiévale* (1974–1975, 16–17:100–113), and sometimes duplicates the article's very words. Readers who have not their own reasons for looking into the question of the agent sense will find no compelling arguments here. As the title suggests, this is not a history of the agent sense, but a contribution to that history. Pattin makes no claim about either the consequences of the dispute between Bartholomew of Bruges and John of Jandun for medieval psychology as a whole or the place of the question of the agent sense in scholastic natural philosophy. Nevertheless, historians now have easy access to a series of texts bearing on a question with a long history. Other scholars who follow Pattin's example by providing texts of specific questions from unpublished manuscripts will encourage the study of these questions and advance our understanding of medieval learning.

PETER G. SOBOL

Udo Benzenhöfer. *Johannes' de Rupescissa "Liber de consideratione quintae essentiae omnium rerum" deutsch: Studien zur Alchemia medica des 15. bis 17. Jahrhunderts mit kritischer Edition des Textes.* (Heidelberger Studien zur Naturkunde der frühen Neuzeit, 1.) iv + 213 pp., bibl., index. Stuttgart: Franz Steiner, 1989. DM 78.

Johannes de Rupescissa (Jean de Roquetaillade) is at once one of the most interesting and most influential of the medieval alchemists. Like the physician Arnald of Villanova, whose works he knew, Rupescissa was an adherent of the burgeoning interest in prophecy experienced by the late Middle Ages. Born in Marcolès, south of Aurillac, in the early fourteenth century, Rupescissa first studied for five years at the University of Toulouse, then took the vows of the Franciscan order in 1332. Apparently under the influence of Peter John Olivi's followers, he embarked on a long series of prophetic works, including such titles as the *Liber ostensor* and *Vade mecum in mea tribulatione*.

Rupescissa knew what he was talking about when he spoke of tribulation: he was incarcerated in Figeac in 1344 and trans-