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**Avicenna's *Liber de animalibus* ('*Abbreviatio Avicennae*').
Preliminaries and State of Affairs***

IBN SĪNĀ'S CONTRIBUTION TO THE TRANSMISSION OF ARISTOTLE'S ZOOLOGY IN THE ARAB WORLD

In the Greek transmission of Aristotle's (384-322 BC) zoological works, in most of the surviving twenty-six manuscripts, books one to nine of the *Historia animalium* have been passed down as a unit. Only one manuscript and eight copies of it also contain the tenth book, which was included in the Arabic translation in the ninth century¹. All nineteen books of the *Historia animalium* (1-10), *De partibus animalium* (11-14) and *De generatione animalium* (15-19) were translated into Arabic; only the two short intermediate treatises *De motu animalium* and *De incessu animalium* were unknown in the Arabic tradition. At the beginning of the thirteenth century, Michael Scot (ca 1170 - ca 1235/6) translated this Arabic translation into Latin during his residence in Toledo. About fifteen years later, during his stay in Italy, he recast into Latin Ibn Sīnā's abridged version and extensive adaptation of this text.

Abū 'Alī al-Ḥusayn ibn 'Abd Allāh ibn al-Ḥasan ibn 'Alī ibn Sīnā (Afšana near Buḥārā ca 370/980 - Hamadān ca 428/1037), Ibn Sīnā (Avicenna)² for short, wrote his zoological work *Al-Ḥayawān* (*On Animals*) as the eighth, last and longest section of *Ṭabī'īyyāt* (*The Physics*), the second part of his large encyclopedia *Kitāb al-Šifā'* (*Book of Healing*), in which he discussed the philosophical and scientific achievements of the Greeks, in particular Aristotle. He probably produced it in 418/1027 on his journey to Šabūr-Ḥwāst in the company of 'Alā' al-Dawla³. In

* I am very grateful to Amos Bertolacci for his willingness to include this article in *Documenti e Studi*, and to Remke Kruk, to Charles Burnett and to the peer-reviewers for several corrections and useful remarks.

¹ D. M. BALME ed., A. GOTTHELF publ., *Aristotle, Historia animalium, Volume I: Books I-X: Text*, Cambridge 2002 (Cambridge Classical Texts and Commentaries 38), *Introduction*, pp. 6-9. F. BERGER, *Die Textgeschichte der Historia animalium des Aristoteles*, Dr. Ludwig Reichert Verlag, Wiesbaden 2005 (Serta Graeca Bd. 21).

² Ibn Sīnā was known in the Latin West under the name Avicenna, derived from the transliteration Avincenna via Hebrew Aven Sina (see V. COURTOIS S. J., *Avicenna Commemoration Volume*, Iran Society, Calcutta 1956, *Introduction* p. ix). The latter form is sometimes also found in Latin manuscripts, e.g. Vat. Chis. E. VIII. 251.

³ D. GUTAS, *Avicenna and the Aristotelian Tradition*, Brill, Leiden - Boston 2014², p. 108; R. KRUK, *Ibn Sīnā On Animals: Between the First Teacher and the Physician* in J. JANSSENS, D. DE SMET eds., *Avicenna and his Heritage*, Leuven University Press, Leuven 2002 (Ancient and Medieval Philosophy, Series 1), pp. 325-341.

doing so he used the knowledge that he had acquired via a ninth-century Arabic translation of Aristotle's zoological works, the *Kitāb al-Ḥayawān*, attributed to (pseudo-) Ibn al-Biṭrīq. That is to say, this translation is ascribed to Ibn al-Biṭrīq in Arabic sources, but modern scholars doubt whether this is correct⁴. Of the nineteen books transmitted in the Arabic tradition, Ibn Sīnā followed with a fair degree of accuracy the first ten books of the *Historia animalium*, the comparative and narrative part of Aristotle's zoology. As regards the contiguous parts, the treatise *De partibus animalium* that treats of the functions of the parts in a physiological and teleological way, and the treatise on reproduction, *De generatione animalium*, he left his own stamp on the text in many respects, using all kinds of information to modernize Aristotle's text and adapt it to the requirements of his own age. Moreover, the focus of attention shifted towards man as the subject of inquiry rather than the animal world, and this inquiry became more medical – and above all anatomical – than biological. The influence of Galen and Ibn Sīnā's own *Qānūn fī l-Ṭibb* is clearly present. Examples of this influence are Ibn Sīnā's attempts to combine Aristotle's theory of the heart as the origin of physical functions with the as of then accepted discoveries of the arteriovenous system, the nervous system and the function of the liver, and his efforts to combine Aristotle's theory of the soul and the role of male semen with the new discovery of the female ovaries and Galen's doctrine of the equal, but not identical, contribution of male and female seed in reproduction⁵. In the method that Ibn Sīnā uses to discuss Aristotle's zoology he mainly proceeds in three ways: he summarizes parts of Aristotle's text, he tries to achieve new syntheses between Aristotle's theories and more modern biological and medical insights and he substitutes considerable parts of Aristotle's text with more recent material, mainly drawn from Galen and the *Qānūn*⁶. He also adds material based on his own observations and third-party eyewitness reports.

⁴ See e.g. the *Introduction* of the editions of Brugman and Drossaart Lulofs 1971, pp. 1-3 and of Kruk 1979, p. 18ff. (note 7). Until now, the authorship of the translation has not been established with any certainty.

⁵ U. WEISSER, *Zeugung, Vererbung und pränatale Entwicklung in der Medizin des arabisch-islamischen Mittelalters*, Lüling, Erlangen 1983, pp. 308-309. EAD., *Die Harmonisierung antiker Zeugungstheorien im islamischen Kulturkreis und ihr Nachwirken im europäischen Mittelalter*, in A. ZIMMERMANN, I. CRAEMER-RUEGENBERG eds., *Orientalische Kultur und europäisches Mittelalter*, « Miscellanea Mediaevalia », 17, Walter de Gruyter, Berlin - New York 1985, pp. 301-327. Esp. p. 323.

⁶ *Al-Šifāʾ, al-Ṭabīʿiyyāt, VIII: al-Ḥayawān* edd. ʿA. MUNTAŠIR, S. ZĀYID, ʿA. ISMĀʿIL, I. MADKOUR, *Préface* pp. 11-20, *Al-Maṭbaʿa al-amīriyya*, Cairo 1970. B. F. MUSALLAM, *Avicenna, X. Biology and Medicine*, in « Encyclopaedia Iranica » (1987-), iranicaonline.org 2016.

THE LATIN TRANSLATION BY MICHAEL SCOT

In the thirteenth century there was available a Latin translation of Aristotle's *Libri de animalibus*, which had been produced by Michael Scot in the famous translation centre in Toledo, possibly around or even before 1215. Scot came from Scotland and, probably as a child or young man, had departed for Toledo in the last quarter of the twelfth century, receiving further training there. As we mentioned, Scot used for his translation the Arabic version of (pseudo-) Ibn al-Biṭrīq, which has been (partly) preserved in three manuscripts, with the individual parts having been edited⁷. Scot's Latin translation was widely disseminated — we still have 64 manuscripts from the thirteenth and fourteenth centuries, not including compendia, excerpts and fragments — and the text was certainly used up to the sixteenth century, despite the fact that William of Moerbeke had made a new, Greco-Latin translation in several stages from around 1260 onwards⁸. An extant Spanish inventory of books from 1338 shows that the autograph of Scot's translation was still in the possession of Cardinal-bishop Gudiel⁹. In Toledo Scot produced many translations of philosophical texts and commentaries from Arabic into Latin, possibly quite often assisted by other, mostly Jewish, scholars, the majority of whom remain shrouded in mystery. Of these texts, only his translation of al-Biṭrūḡī *On the Movements of the Heavens*, dedicated to the important Stephen of Provins, whose tasks included assessing the teaching material at the new universities, is dated: 18 August 1217 (made

⁷ ARISTOTLE, *History of Animals*, Arabic. *Ṭibā' al-ḥayawān. Tardjama: Yuḥannā Ibn al-Biṭrīq*, ed. 'A. BADAWĪ, Kuwait 1977. L. S. FILIUS ed., in *Aristoteles Semitico-Latinus* (Brill, forthcoming). ARISTOTLE, *Parts of Animals*, Arabic. *Adjzā' al-ḥayawān. Tardjama: Yuḥannā Ibn al-Biṭrīq*, ed. 'A. BADAWĪ, Kuwait 1978. R. KRUK ed., *The Arabic Version of Aristotle's Parts of Animals. Books XI-XIV of the Kitāb Al-Ḥayawān*, North-Holland Publishing Company, Amsterdam - Oxford 1979 (ASL 2). ARISTOTLE, *Generation of Animals*, Arabic. *Aristotle, Generation of Animals. The Arabic Translation Commonly Ascribed to Yahyā ibn al-Biṭrīq*, edd. J. BRUGMAN, H. J. DROSSAART LULOFS, Brill, Leiden 1971. The Arabic translation is preserved in three manuscripts: Leiden Or. 166 (G), London British Library Or. Add. 7511 (L) and Tehran Majles Library 1143 (T).

⁸ Scot's translation is being edited in the series *Aristoteles Semitico-Latinus* (Brill). *Aristotle, De animalibus. Michael Scot's Arabic-Latin Translation. Part three: Books XV-XIX, Generation of Animals*, ed. A. M. I. VAN OPPENRAAY, Brill, Leiden - New York - Köln 1992 (ASL 5.3). EAD., *Part two: Books XI-XIV, Parts of Animals*, Brill, Leiden - Boston - Köln 1998 (ASL 5.2.). EAD., *Part one: History of Animals*, (ASL 5.1 forthcoming). De Graeco-Latin translation by Willem van Moerbeke is being edited in the series *Aristoteles Latinus* (Brill). *De Historia Animalium, Translatio Guillelmi de Morbeka, Pars prima: Lib. I-V*, edd. P. BEULLENS, F. BOSSIER, Brill, Leiden - Boston - Köln 2000 (Aristoteles Latinus XVII 2.1.1.). *De Generatione Animalium, Translatio Guillelmi de Morbeka*, ed. H. J. DROSSAART LULOFS, Desclée de Brouwer, Bruges - Paris 1966 (Aristoteles Latinus XVII 2.V). *De partibus animalium* (XVII.1-2.IV) will be edited by Pietro Rossi.

⁹ M. ALONSO ALONSO, *Bibliotecas medievales de los Arzobispos de Toledo*, «Razón y Fé», 123, 1941, pp. 295-309.

« cum Abuteo levite »). Scot is credited with Aristotle's *Physica* and *De animalibus*, Averroes' commentaries on the *Physica*, *Metaphysica*, *De anima*, *De caelo et mundo*, *De generatione et corruptione* and *Meteora*, Avicenna's *De animalibus*, al-Bitrūḡī *De motibus caelorum* and many other larger and smaller works of which his authorship is often uncertain or which are certainly misattributed to him¹⁰. « Almost all information about his life and work is uncertain ... Although imaginative scholars have established undocumented traditions, no satisfactory analysis — linguistic, stylistic, or doctrinal — of writings ascribed to him has been carried out. It is thus impossible to determine the accuracy of many attributions » (Lorenzo Minio-Paluello in *Dictionary of Scientific Biography* 1974)¹¹. For all the recent studies of Scot's work and translation method¹², not much progress has been made in this regard. Editing and studying his work is very time-consuming and it is difficult to find editors and funding. The wise words of Marie-Thérèse d'Alverny still apply: « nous craignons qu' il ne faille attendre la publication de plusieurs éditions munies d' index bilingues pour nous orienter sans trop de risques »¹³.

THE LATIN MANUSCRIPT TRADITION

In 1215-6, in the retinue of Archbishop Rodrigo of Toledo, Master Michael Scot attended the fourth Lateran Council, in which the primacy of the archbishopric of Toledo was confirmed, Frederick II of Hohenstaufen was recognized as emperor, many decisions on canon law were taken and the bestowal of benefices was regulated. Around 1220 and in the following years until his probable death

¹⁰ For instance, Dag Hasse questions his authorship of the *Meteora* commentary. See note 11.

¹¹ Dag Hasse is an exception, largely due to his editing of the *Metaphysics* commentary. See D. N. HASSE, A. BERTOLACCI, *The Arabic, Hebrew and Latin Reception of Avicenna's Metaphysics*, De Gruyter, Berlin - Boston 2012.

¹² I. A. F. J. CARMODY, *The Latin Style of Michael Scot in De celo*, in W. D. HAND, G. O. ARLT, J. J. AUGUSTIN eds., *Humaniora. Essays in Literature - Folklore - Bibliography, Honoring Archer Taylor on his Seventieth Birthday*, Locust Valley, New York 1960, pp. 208-218. A. M. I. VAN OPPENRAAY, *Quelques particularités de la méthode de traduction de Michel Scot*, in J. HAMESSE, M. FATTORI eds., *Rencontres de cultures dans la philosophie médiévale*, Université Catholique de Louvain, Louvain-la-Neuve - Cassino 1990, pp. 121-129. D. N. HASSE, *Latin Averroes Translations of the First Half of the Thirteenth Century*, Georg Olms Verlag, Hildesheim - Zürich - New York 2010.

¹³ M.-T. D'ALVERNY, *Les traductions d' Avicenne. Quelques résultats d' une enquête*, in *Actes du V^e Congrès International des Arabisants (Bruxelles 1970)*, Publications du Centre pour l'Étude des Problèmes du Monde Musulman Contemporain, Bruxelles 1971 (Correspondance d'Orient, 11), pp. 151-158 (158). Mlle d'Alverny has done lion's work in furthering our knowledge of the reception of Avicenna's work in the West. An anthology of her work is offered in *Avicenne en Occident. Recueil d'articles de Marie-Thérèse d'Alverny*, Librairie J. Vrin, Paris 1993 (Études de Philosophie Médiévale LXXI). Furthermore there is *An Annotated Bibliography on Ibn Sīnā (1970-1989)* by J. L. JANSSENS, University Press, Leuven 1991; *Id.*, *First Supplement (1990-1994)*, FIDEM, Louvain-la-Neuve 1999 (Textes et Études du Moyen Âge 12).

in 1235/6, Scot's life unfolds mainly in central and southern Italy and Sicily. Among other places, he stays in Bologna, where in 1220 he writes a celebrated gynaecological report on a case of a calcified fibroid tumor in his practice. It has survived in the margin of three Latin manuscripts of his translation of *De generatione animalium* as an annotation at the appropriate place, the discussion of the *mola uteri*¹⁴. He had been ordained as a priest and uses the title Magister, enters the service of the papal Curia (1224-1227) and received benefices in England and Scotland on the recommendation of both Pope Honorius III and Pope Gregory IX. In this period he also frequented the court of Emperor Frederick II Hohenstaufen, who was deeply interested in anything to do with science and knowledge of nature and most certainly also in the Aristotelian treatise on zoology. For his day and age he possessed a large and famous zoo, was of course a passionate and proficient hunter and had great, above all practical, knowledge of birds of prey, by his own account even greater than that of Aristotle. Scot is noted as a scholar, translator, philosopher, physician, astrologer and later also as necromancer and magus. In this period he writes his most famous own works, including the *Liber introductorius*, dealing with many learned subjects and dedicated to Emperor Frederick, the *Liber particularis*, a supplementary work for advanced readers, concluding with a report of Scot's answers to interesting questions from the emperor about all kinds of intellectual subjects, and the *Liber fisionomie*, on the human body and its influence on mind and character, as well as various works on alchemy and astrology. We know that meanwhile he was also involved in the organization of the curricula of the first universities and introduced there works by Aristotle and commentaries by Ibn Rušd (Averroes) on these texts in Latin translation, in any case in Italy, but also in Paris and Oxford and probably in other centres as well. It was probably at the emperor's request that Scot translated Ibn Sīnā's *Liber de animalibus* (*Kitāb al-Ḥayawān*), also referred to as *Abbreviatio Avicennae*, perhaps with the help of somebody like Jacob Anatolio, who worked together with Scot in Naples around 1230¹⁵. In any case this translation was dedicated by Scot to Emperor Frederick. To this day thirty-three Latin manuscripts from the late thirteenth and early fourteenth century, mainly from Italy and Northern Europe, have been attested, of which twenty-eight were described in George Lacombe's *Aristoteles Latinus* catalogue and four other manuscripts as well in Marie-Thérèse d'Alverny's *Avicenna*

¹⁴ *De Generatione animalium*, 4, 775b25-776a13. Cf. VAN OPPENRAAY ed., GA, ASL 5 cit., pp. 244-246); Y. V. O'NEILL, *Michael Scot and Mary of Bologna. A Medieval Gynecological Puzzle*, «Clio Medica», 8/2, Hoeber, Amsterdam 1973, pp. 87-111, with *An Addendum* in «Clio Medica», 9/2, Hoeber, Amsterdam 1974, pp. 125-129.

¹⁵ C. BURNETT, *Michael Scot and the Transmission of Scientific Culture*, «Micrologus», 2, 1994, pp. 101-126, p. 111.

Latinus Codices, edited by Simone van Riet and Pierre Jodogne in 1994¹⁶. Five of these are fragmentary, while the others contain the whole text. Manuscript collections often incorporate Avicenna's work together with texts by Aristotle and Averroes. Hence the frequent overlap between large manuscript catalogues like those of Lacombe and d'Alverny. In her 1971 article *Les Traductions d'Avicenne* Marie-Thérèse d'Alverny distinguishes five categories of manuscript collections with translations of Avicenna. (1) There is a group of manuscripts produced in Toledo at the end of the twelfth century; it is a colourful hotch-potch of works, including Avicenna's *Kitāb al-Šifā'*, by well-known and anonymous translators and learned authors from this period. By the beginning of the thirteenth century these collections had become consolidated and much used. Some new collections of translations are disseminated by travelling scholars. (2) Towards the mid-thirteenth century many new combinations are formed, for instance thirteenth-century translations of Averroes are added to the existing twelfth-century collections. Michael Scot made a considerable contribution in this phase of the manuscript transmission, both in Toledo and in Italy. The collections formed in this period are externally plain, but their contents are crucial to the history of the spread of translations of Aristotle and Averroes and of chiefly Arabic philosophers (the so-called *corpus vetustius*)¹⁷. The number of manuscripts of Avicenna's texts increases explosively in the second half of the thirteenth century, and they are found either mixed with earlier collections or purposely combined with Aristotle's principal treatises. The surviving catalogue of Cardinal-bishop Garcia de Gudiel from 1338¹⁸ offers a detailed picture of the wealth of manuscripts extant in the collection of prominent people in those days. (3) Special collections with Avicenna's work were formed in particular by the widely travelling Mendicants, Dominicans and Franciscans¹⁹. (4) In the late thirteenth and early fourteenth century we see the development of mixed collections of Avicenna's work with scientific writings and works by learned

¹⁶ *Aristoteles Latinus, codices descripsit G. Lacombe et al., Pars prior*, La Libreria dello Stato, Roma 1939, *Pars posterior*, Cambridge University Press, Cambridge 1955, *Supplementa altera* ed. L. MINIO-PALUELLO, Desclée de Brouwer, Bruges - Paris 1961. S. VAN RIET, P. JODOGNE, *Avicenna Latinus Codices, descripsit Marie-Thérèse d'Alverny*, Peeters - Brill, Louvain-la-Neuve - Leiden 1994.

¹⁷ C. BURNETT, *The Arabo-Latin Aristotle* in A. M. I. VAN OPPENRAAY ed. with the collaboration of R. FONTAINE, *The Letter before the Spirit: The Importance of Text Editions for the Study of the Reception of Aristotle*, Brill, Leiden - Boston 2012 (ASL 22), pp. 95-105.

¹⁸ See note 9.

¹⁹ This environment produced for instance the three Latin manuscripts containing both Scot's translation of Aristotle's zoological works and that of Avicenna: Vat. Chisianus E. VIII. 251 olim Sacri Conventus S. Francisci Assisiensis cod. CLXIV; Brugensis Bibl. Seminarii Maioris 99/112 olim monasterii S. Mariae de Dunis; Florentinus Laurent. S. Crucis Plut. XIII sin. cod. 9 olim conventus Sanctae Crucis n. 545.

masters like Albertus Magnus or Thomas Aquinas. (5) From the second half of the fourteenth century Avicenna's writings play a major role particularly in medical collections in Italy, obviously owing to Gerard of Cremona's Latin translation of his *Qānūn*, although his *Šifā'* also remains of great importance.

Besides the studies of Lacombe, d'Alverny and others, some valuable codicological work on the Latin text in the Vatican manuscript Chigi E. VIII. 251 has been done by Erik Kwakkel at Leiden University and previously at the University of Victoria in Canada. In an article for *Viator* in 2009, for instance, he analyzed three unusual correction techniques encountered in the Avicennian text: the use of a struck-out *d* to flag a mistake; the replacement of a quire containing faulty text with one containing an improved reading; and the filling in of lacunae left behind during the copying of the main text²⁰. This oldest surviving Latin manuscript, which holds both Scot's translation of Aristotle's zoological text and that of Avicenna (see note 16), also attests to Scot's connection with the emperor and his court: this is borne out by two identical personal dedications and a concluding eulogistic hexameter in the four principal languages of Frederick's empire²¹. The codex once formed part of the library of the Sacro Convento in Assisi (no. CLXIV in the 1381 inventory); we know that brother Elias was on friendly terms with Michael Scot and a supporter of Frederick II²². In 1232 Master Henricus of Cologne made a copy of this text, kindly made available by the emperor, in the house of his court physician Master Volmar in Melfi. Emperor Frederick himself also showed his credentials in the field of zoology: in later years he completed his treatise on birds and falconry *De arte venandi cum avibus*, thus fulfilling a long-cherished wish. The influence of Scot's translation of Aristotle's treatise on *De arte venandi* is demonstrable, but the possible influence of his translation of Avicenna's *Abbreviatio* has not yet been studied in detail²³. Both within Aristotle's oeuvre and within Avicenna's *Šifā'* the nineteen zoological books take up by far the most space, indicating the importance that both philosopher-scholars attached to the subject.

²⁰ E. KWAKKEL, *Behind the Scenes of a Revision: Michael Scot and the Oldest Manuscript of his Abbreviatio Avicenne*, « *Viator* », 40/1, 2009, pp. 107-132.

²¹ M.-T. D'ALVERNY, *L'Explicit du « De animalibus » d'Avicenne traduit par Michel Scot*, « Bibliothèque de l'École des Chartes », 115, 1957, pp. 32-42. KWAKKEL, *Behind the Scenes* cit. E. KWAKKEL, A. M. I. VAN OPPENRAAY, *Introduction*, in *Aristotle, De animalibus. Part one, History of Animals* (ASL 5.1 forthcoming).

²² D'ALVERNY, *L'Explicit du « De animalibus »* cit., p. 34.

²³ B. VAN DEN ABELE, *Inspirations orientales et destinées occidentales du 'De arte venandi cum avibus' de Frédéric II*, in *Federico II e le nuove culture. Atti del XXXI Convegno storico internazionale*, Todi 1994, Fondazione CISAM, Spoleto 1995, pp. 363-391. A. PAULUS, B. VAN DEN ABELE, *Frédéric II de Hohenstaufen, « L'art de chasser avec les oiseaux ». Le traité de fauconnerie 'De arte venandi cum avibus' traduit, introduit et annoté*, J. Laget, Nogent-le-Roi 2000 (*Bibliotheca Cyngetica* 1), p. 30 n. 132.

THE LATER HISTORY OF THE TEXT

Apart from Michael Scot, no one has ever translated Ibn Sīnā's *Liber animalium* into another contemporary or modern language²⁴. But it may be that one or more compendia of the text circulated. The clusters of quotations from Ibn Sīnā's *Ḥayawān* occurring in other works, like Marwazī's *Kitāb Ṭabā'ī 'al-Ḥayawān*, could point in this direction²⁵. As Scot's translation appears to render an abridged version of the text, the *Abbreviatio Avicennae* may be a Latin translation of an Arabic compendium of the text. This will have to be further investigated during work on the edition of the translation. Scot's translation style is essentially as literal as possible, though he does regularly shorten the often elaborate Arabic paraphrases of the Greek text. However, it is unlikely that he independently omitted entire sections, as quite often seems to be the case in his translation of Avicenna's text. In general, he aims to give the reader a clear Latin text and a good understanding of its contents. Sometimes, he therefore forgoes a literal translation and liberally renders the text on the basis of its content. Although scholars have conducted some research into Michael Scot's translation method and his own works (among others, Francis Carmody, Dag Hasse and Aafke van Oppenraay)²⁶, there is need for a systematic inquiry, preferably of course by means of critical editions of his translations and his own writings. Another desideratum is a translation of the Arabic text of his *Ḥayawān* into a modern language like English, French, German, Spanish or Italian, the more so because it is rather lengthy. As regards scientific commentaries on the text, the sole example we know of is Albertus Magnus' great commentary on Aristotle's zoology, in which he incorporated Scot's Latin translations of both Aristotle's and Avicenna's text, since Scot had also translated Aristotle's work from Arabic into Latin. Albertus' commentary was published in 1916 by Hermann Stadler, who tried to provide a meticulous and also optical demarcation of the passages from Scot's translations of both works as well as of Albertus' own text and his quotations drawn from elsewhere²⁷. Albertus' work on animals was ultimately

²⁴ H. DAIBER, *Bibliography of Islamic Philosophy*. Ibn Sīnā, Brill, Leiden - Boston 2011, vol. I, p. 474.

²⁵ R. KRUK, 'On Animals': *Excerpts of Aristotle and Ibn Sīnā in Marwazī's 'Ṭabā'ī 'al-Ḥayawān'* in C. STEEL ET AL. eds., *Aristotle's Animals in the Middle Ages and Renaissance*, Leuven University Press, Leuven 1999, pp. 96-125.

²⁶ See note 12. For Scotus' *Liber introductorius* (*Liber quatuor distinctionum*, *Liber particularis*, *Liber physionomie*) see i.a. BURNETT, *Michael Scot and the Transmission of Scientific Culture* cit.

²⁷ Albertus Magnus. *De animalibus libri XXVI*, ed. H. STADLER, in *Beiträge zur Geschichte der Philosophie des Mittelalters*, 15-16, Aschendorffsche Verlagsbuchhandlung, Münster 1916-1920. K. F. KITCHELL, I. M. RESNICK tr., *Albertus Magnus, On Animals: A Medieval Summa Zoologica*, 2 vols., The Johns Hopkins University Press, Baltimore - London 1999. A. TAKAHASHI, *Nature, Formative Power and Intellect in the Natural Philosophy of Albert the Great*, « Early Science and Medicine », 13/5, 2008, pp. 451-481.

printed six times, in Rome (1478), in Mantua (1479) and four times in Venice (1490-1519). Via this commentary of Albertus the zoological texts of Aristotle and Avicenna were disseminated and became widely known, particularly among the Mendicants. The rich *Nachleben* of the texts in the Middle Ages and the Renaissance has been extensively studied in the literature. Ample information on this can be found in for instance the detailed and richly documented article *Le 'De animalibus' d'Aristote dans le monde latin: modalités de sa réception médiévale* by Baudouin van den Abeele²⁸. In the Renaissance the translation by Theodorus Gaza, printed from 1476, made a great impact²⁹.

In what is called the 'Syrian Renaissance' of the twelfth and thirteenth centuries many scientific achievements of the Islamic Arab-speaking world are incorporated into the Christian Syrian community. Especially interesting here is the reception history of Ibn Sīnā's writings in the Syriac-speaking world, particularly that of the *Šifā'*³⁰. The most important representative here is Barhebraeus (Abū l-Faraġ Grigorios Bar 'Ebrāyā, 1225/6-1286), who assumed the role of commentator, translator and compiler of Ibn Sīnā's work within his own writings (in particular *Discourse of Wisdom*, *Cream of Wisdom*, *Candelabrum*). He is also significant as a textual witness because certain Arabic readings of Ibn Sīnā can be corrected or indeed confirmed by means of the Syriac texts, just as in the case of a medieval Latin version. Moreover, he was an intermediary for the transmission of Ibn Sīnā's body of thought within the community of Syrian Christians (West Syrians, East Syrians, Maronites) and Arab-speaking Copts. In many respects Barhebraeus' voluminous encyclopedia *Cream of Wisdom* (*Butyrum sapientiae*) is modelled on Ibn Sīnā's *Šifā'*. Regrettably, no further research has yet been done into the part on zoology, although some parts of the *Butyrum* have been published in the *Aristoteles Semitico-Latinus* series (see note 38). It will undoubtedly be interesting to be able to compare the Aristotelian treatises of Ibn Sīnā and of Barhebraeus in due course.

Ibn Sīnā's Arabic text was published by a team of scholars under the direction of Ibrahim Madkour in 1970, under the title *Al-Šifā'*, *La Physique VIII^e – Les Animaux (Fī Ṭabā'ī al-Ḥayawān)*³¹. The introduction contains an extensive table

²⁸ B. VAN DEN ABEELE, *Le 'De animalibus' d'Aristote dans le monde latin: modalités de sa réception médiévale*, « Frühmittelalterliche Studien », 33, 1999, pp. 287-318. A. M. I. VAN OPPENRAAY, *Michael Scot's Translation of Aristotle's 'Books on Animals' and the Pleasure of Knowledge*, « Quaestio », 15 (*The Pleasure of Knowledge/Il piacere della conoscenza*, P. PORRO, L. STURLESE eds.), 2015, pp. 145-154.

²⁹ P. BEULLENS, A. GOTTHELF, *Theodore Gaza's Translation of Aristotle's 'De Animalibus': Content, Influence, and Date*, « Greek, Roman and Byzantine Studies », 47, 2007, pp. 469-513.

³⁰ H. TAKAHASHI, *The Reception of Ibn Sīnā in Syriac. The Case of Gregory Barhebraeus* in D. C. REISMAN ed. with the assistance of A. H. AL-RAHIM, *Before and after Avicenna. Proceedings of the First Conference of the Avicenna Study Group*, « IPTS », 52, 2003, pp. 249-281.

³¹ See note 6.

of contents of the work and a comprehensive discussion of the treatise, with chapters on Aristotle as biologist and on the Arabic translation and its influence on Arabic literature³², on Ibn Sīnā and his views and interests with regard to biology and the work of his illustrious predecessor, and on the composition of his treatise in four parts: comparative zoology, anatomy, physiology, and reproduction and embryology. Dr. Madkour stresses the originality of Ibn Sīnā's work and of the way he utilizes his, mainly medical, sources, including his own *Qānūn*. The editors have made no attempt to correct the many corrupted animal names in the Arabic text on the basis of the Greek text of Aristotle's zoological works, as 'Abdurrahmān Badawī has done for the edition of the Arabic translation of the Aristotelian text³³. Particularly in relation to lexis and translation technique there is still much research to be conducted, both on Ibn Sīnā's text and on Michael Scot's translation of it.

Michael Scot's Latin translation of Ibn Sīnā's biology was printed twice under different titles, *Avicenne Liber De animalibus* and *Avicenne Liber De natura animalium*, both times in Venice: (1) *Avicenna, De Animalibus*, per magistrum Michaelem Scotum de arabico in latinum translatus, Venetiis, per Joh. et Gregorium de Gregoriis (ca 1500), GW III (1928) no. 3112. And (2) *Avicenne perhypatetici philosophi ... per canonicos emendate ... De Animalibus (De natura animalium)*, ff. 29-64, Venetiis, ... per Bonetum Locatellum Bergomensem presbyterum ... 1508. The different titles are mainly used above the columns of text, sometimes interchangeably. The results of the first findings of my study of the Latin text were published in *Michael Scot's Latin Translation of Avicenna's Treatise on Animals: Some Preliminary Remarks on the Future Edition*³⁴. In the article, I describe a special branch of manuscripts from Venice. These manuscripts contain four passages, comprising approximately two printed columns, which appear to have fallen victim to an accidental re-ordering, probably because the correct order of the gatherings was compromised during copying of the text at the scriptorium. This discrepancy becomes apparent if one compares the Venice manuscripts to the original Arabic text and the text in the other Latin manuscripts. Unfortunately, manuscripts from this faulty branch were used for both early editions of Avicenna's text. The restored order of the passages in question can be found at the end of the article just mentioned. The title *Abbreviatio Avicenne* under which the treatise has also become known is derived from the way in which the work is sometimes referred to in the manuscripts, which provides an explanation

³² On this, see also the introductions in the editions of Brugman and Drossaart Lulofs (1971) and Kruk (1979) (see note 7).

³³ BADAWĪ, *Aristotle, History of Animals*, Arabic cit.

³⁴ R. BEYERS, J. BRAMS ET AL. eds., *Tradition et Traduction. Les Textes Philosophiques et Scientifiques Grecs au Moyen Age Latin. Hommage à Fernand Bossier*, Leuven University Press, Leuven 1999, pp.107-114.

for the variations at the beginning of the text in the manuscript from Bruges 161: *Incipit abbreviatio avicenne libri animalium* and in Pommersfelden 159: *Incipit abbreviatio avicenne super librum animalium aristotilis*³⁵.

The committee of the *Aristoteles Latinus* decided from the outset that an edition of Michael Scot's Latin translation of Ibn Sīnā's *Liber de animalibus* should be included in the *Corpus Philosophorum Medii Aevi*³⁶. The treatise forms part of the edition of the *Kitāb al-Šifā'* and belongs in the *Avicenna Latinus* series founded by Simone van Riet³⁷. However, because of the expertise present in the sister project *Aristoteles Semitico-Latinus* concerning the zoological treatises and the translator Michael Scot, the edition of this part was entrusted by Van Riet to the ASL and incorporated as a central volume in this series³⁸.

³⁵ Brugge, Bibliotheek van het Groot Seminarie 99/112; Pommersfelden, Schlossbibliothek 159.

³⁶ *Aristoteles Latinus, Pars prior, Praefatio: Libri de animalibus* cit., p. 81 n. 2.

³⁷ DAIBER, *Bibliography of Islamic Philosophy* cit.

³⁸ See brill.com/asl for a list of volumes.

APPENDIX

Avicenna's *Liber de animalibus*. The beginning of Michael Scot's Arabic-Latin translation transcribed from the oldest ms. Vaticanus Chigi E. VIII. 251 F. 109r. The reader may compare the text of the translation with the beginning of the Arabic text from the edition of Ibrāhīm Madkour et.al. of 1970. The abbreviating style of Scot and his focus on the content is already clearly visible in this first part of the translation³⁹.

Fen octava de summa naturarum et est in natura animalium.

Frederice Romanorum Imperator domine mundi. suscipe devote hunc laborem Michaelis Scoti. ut sit gratia capiti tuo. et torques collo tuo.

Incipit abbreviatio Avincenne super librum animalium Aristotilis.

5 Et animalia quedam communicant in membris sicut equus et homo in nervo et in carne et quedam discrepant in membris consimilibus vel in habitudine membrorum. Et que discrepant in membro, discrepant in membro vel quia membrum est simplex vel compositum. Exemplum secundi est quia equus habet caudam et homo non, exemplum primi est quod testudo habet conchas et irricius spinas et homo non et
10 pisces squamas.

In habitudine autem aut quantitate aut qualitate aut situ aut actione aut passione. Quantitate ut os oculi nicticoracis magnum et os oculi aquile parvum, aut numero ut in araneis quarum pedes in aliquibus sunt octo in aliquibus sunt decem et quarundam sex. Qualitate colore et figura aut mollicie aut duricie. Diversitas in
15 situ ut in mamillis elephantis et eque et diversitas in actione ut in auribus elephantis cum quibus pugnat et suis naribus quibus accipit, diversitas in passione ut in oculis vespertilionis qui sunt debiles et esse oculi irundinis econtrario.

Partes vero animalis aut sunt humide ut sanguis pinguedo medulla aut sperma et humores, aut dure ut nervi vene ossa capilli et cartillagines et cornua.

20 Et quia sic diversantur animalia quod etiam quedam illorum sunt aquea et quedam agrestia. Et aquea sunt multis modis quia quedam in nutrimento et habitatione sunt aquea et quedam inspirant aquam et recipiunt in ventre et evomunt eam et non vivunt extra eam, et quedam sunt quorum habitatio et nutrimentum sunt aquea, verumtamen cum hoc inspirant aerem tantum et ita faciunt nutrita in
25 aqua sive ea que egrediuntur ab aqua sicut tortuca. Et quedam sunt tantum in aqua habitantia sicut quedam conche et halzun que non apparent aeri et non intrat aqua in ventres eorum nisi secundum viam acquirendi nutrimentum, non secundum viam inspirationis sed quod via inspirationis est ut inspiret, deinde evomet ipsam ad eventationem caloris naturalis ut expellat superfluum calidum. Et aquea que

³⁹ Arabic text cf. Madkour (1970), pp. 1. 3-4, 2.4 – 4.17, see note 6; Latin transcript by Aafke van Oppenraay from Ms. Vat. Chis. E. VIII. 251 F. 109r.

vivunt in aqua et non solum ex aqua licet illud animal quod vivit solum ex aqua non 30
habet locum nisi aquam.

Et quedam animalia sunt in pelago et quedam in stagno, quedam in mari, stagno
ut rane. Et quedam agrestia inspirant per os et nares et quedam non inspirant ita
sed per poros tantum, ut apes et musce et vespe et animalia anulosa. Et quedam 35
animalia sunt aquea et postea fiunt agrestia sicut grece medemeiezzdez et vivit
in fluminibus, deinde alteratur ea forma et fit astaraz et egreditur ad agrum. Et
animalia aquea quedam que sunt undosa et quedam in ripa et quedam cenosa et
quedam manent in petris. Et animalia que semper sunt in uno loco sunt sicut species
concarum et quedam sunt libera corpore, ut multi pisces et quedam adherent 40
non offert eis aqua nutrimentum sufficiens.

الفن الثامن من جملة الطبيعيات وهو في طبائع الحيوان

إن الحيوان قد يشترك في أعضاء، وقد يتباين بأعضاء. أما الشركة، فمثل اشتراك الإنسان والفرس في أن لهما لحما وعصبا وعظما، وإن كان المشترك فيه واحدا بالجنس لا بالتنوع. وأما التباين فعلى وجهين: لأنه إما أن يكون التباين في نفس العضو، وإما أن يكون في حال العضو. والتباين في نفس العضو، إما أن يكون من حيث هو مركب آلى، وإما أن يكون من حيث هو بسيط أيضا. مثال الأول افتراق الإنسان والفرس في أن للفرس ذنبا وليس للإنسان، وإن كان أجزاء الذنب البسيطة التي للفرس وهي العظم والعصب والجلد واللحم والشعر موجودة له بالجنس. ومثال الثاني افتراق الإنسان والسلحفاة في أن للسلحفاة صدفا يحيط بها وليس للإنسان. وكذلك للسمك فلوس، وللقنفذ شوك، وليس لأشياء كثيرة.

وأما التباين في حال العضو، فإما أن يكون من باب الكم، وإما أن يكون من باب الكيف، وإما أن يكون من باب الوضع، وإما أن يكون من باب الفعل، وإما أن يكون من باب الانفعال. أما الذي من باب الكم، فإما أن يتعلق بالعظم، مثل كون عين البوم كبيرة، وعين العقاب صغيرة، أو يتعلق بالعدد، مثل ما أن أرجل ضرب من العناكب ستة، وأرجل ضرب آخر ثمانية أو عشرة. والذي من باب الكيف فكاختلافهما في اللون، أو في الشكل والصلابة واللين.

وأما الاختلاف في الوضع فمثل اختلاف وضع ثدي الفيل والفرس، فإن ثدي الفيل عند قرب الصدر، وثدي الفرس عند السرة. وأما الاختلاف في الفعل، فمثل كون أذن الفيل صالحة للذب، مع كونه آلة للسمع، وليس كذلك للإنسان؛ وكون أنفه آلة للقبض دون أنف غيره. وأما الاختلاف في الانفعال، فمثل كون عين الخشاف سريعة التحير في الضوء، وكون عين الخطاف بالضد.

وأجزاء بدن الحيوان إما رطبة، وإما يابسة. ومن الرطوبة الدم والشحم والثرث والمخ والمنى وباقي الأخلاط والفضول. ومن اليابسة العصب والجلد والعرق والشعر والعظم والغضروف والظلف والقرن، وما يجري مجراه، فضرب من الاختلاف الحيواني في الأعضاء.

وقد يختلف الحيوان من جهة المأوى؛ فبعضها مائية، وبعضها يابسية برية. والمائية على ضرب: منها ما مكانه وغذاؤه وتنفسه مائي، فله بدل التنفس النسيجي تنشق مائي، فهو يقبل الماء إلى باطنه ثم يرده، ولا يعيش إذا فارقه. ومنه ما مكانه وغذاؤه مائي، لكنه مع ذلك يتنفس من الهواء فقط، وسواء كان معدنه في الماء فلا يبرز، أو كان له أن يبرز ويفارق الماء مثل السلحفاة المائية. ومنه ما مكانه وغذاؤه مائي، وليس يتنفس ولا يستنشق، مثل أصناف من الصدف والحلازين التي لا تظهر للهواء ولا تستدخل الماء إلى باطنها إلا على سبيل استنفاد

35 الغذاء لا على سبيل التنفس. وسبيل التنفس أن يستنشقه ثم يرده ليروح الحار الباطن، وليدفع الفضول الحارة، التي إذا احتبست في الحار الغريزي فسد لها الحار الغريزي. فإنما يكون الحيوان مائياً، لأن مكانه الطبيعي ماء، وليس يكون مائياً لأنه لا يغتذى إلا من الماء فقط، ولا يتنفس إلا من الماء فقط.

كما أن الحيوان البري ليس يكون برياً إلا لأن مكانه الطبيعي بر، وليس لأنه لا يغتذى من الماء وما فيه. ومعلوم أن الحيوان الذي لا يستنشق إلا من الماء فليس مكانه الطبيعي إلا الماء، ولا غذاؤه إلا في الماء؛ وأن الحيوان الذي لا يغتذى إلا في الماء، فإن مكانه الطبيعي الماء؛ ولا ينعكس. والحيوانات المائية أيضاً تختلف، فبعضها مأواها الذي تنسب إليه مياه الأنهار الجارية؛ وبعضها مأواها مياه البطائح، مثل الضفادع؛ وبعضها مأواها ماء البحر. والحيوان البري منه ما يتنفس من طريق واحد كالقمل والخيشوم، ومنه ما لا يتنفس كذلك، بل على نحو آخر من مسامه مثل المخزرات، كالزنبور والنحل. ومن الحيوانات ما تكون مائية ثم تستحيل برية، مثل حيوان يسمى باليونانية ما دام مائياً أسيداس وهو يعيش في الأنهار، ثم أنه تستحيل صورته ويصير أسطوس ويبرز إلى البر. والحيوانات المائية منها لجية، ومنها شطية، ومنها طينية، ومنها صخرية. والحيوانات المائية منها ذات ملاصق تلزمها كأصناف من الأصداف، ومنها متبرية الأجساد مثل السمك والضفادع. 40 واللاصقة منها ما لا يزال يلتصق ولا يبرح ملصقا مثل أصناف من الصدف، والإسفنجة؛ ومنه ما يلصق ثم يتبرأ، ويبين الملصق لطلب الغذاء، إذ لا يكون غذاؤه الكافي ما يؤديه إليه الماء، أو يتصل به. 45 50

ABSTRACT

Avicenna's Liber de animalibus ('Abbreviatio Avicennae'). Preliminaries and State of Affairs

In this article, I provide an overview of the status quaestionis and the current research agenda of Michael Scot's Arabo-Latin translation of Ibn Sīnā's (Avicenna's) *Kitāb al-Ḥayawān*, or *Liber de animalibus* (*Book on Animals*), as part of the Latin translation of the encyclopedia *Kitāb al-Šifā'*. I describe what has been ascertained so far on this topic in an explicit and documented way, opening up paths for future research. I deal with Ibn Sīnā's contribution to the transmission of Aristotle's zoology in the Arab world, with Michael Scot, the author of the Latin translation, and his Arabic model, and with the relationship between Scot's translation and Avicenna's Arabic version — as well as with the original Greek text by Aristotle —, with his style and with the Latin manuscript tradition and its dissemination. I outline the *Nachleben* of the treatise in commentaries, both incunable printings and its reception in the medieval period. In conclusion, I discuss the planned edition of the work, and provide as a sample, in an appendix, the beginning of both the Arabic and the Latin texts.

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