

Michael Scot's Translation of Aristotle's *Books on Animals* and the Pleasures of Knowledge
Aafke M.I. van Oppenraay, Huygens ING, The Hague

Abstract

Michael Scot's thirteenth-century Arabic-Latin translation of Aristotle's zoological works strongly influenced the medieval reception of these books. Whereas Scot's translation was mostly scientific, a growing public was offered the opportunity to experience the pleasures of this kind of knowledge in general.

Keywords

Aristotle, Michael Scot, Arabic-Latin translation, Arabic manuscripts, Latin manuscripts, medieval reception of zoology, manuscript illustrators

We can safely assume that humanity has had a close connection with nature since its inception and that human beings have always been observing animals and plants, rocks and other matter with admiration and fascination. Proof of this can generally be found in the field of archaeology, but for this paper, which is concerned with the pleasures of zoological knowledge in the Middle Ages¹, we will begin our study of animals in the Book of Genesis (I, 20-31)², which describes how God created the animals as gems to the earth for the use and benefit of mankind and how Adam provided these creations with suitable names. This frame of mind had a considerable influence on medieval scholars and scientists and their ideas about the roles of human beings and animals in society. They came to realize that animals could be used in more than a purely material manner – as beasts of burden or riding animals, for surveillance or hunting or as a mere source providing food, clothing or medicine. They learned that animals could also perform a spiritual function, with their characteristics mirroring or symbolizing human nature and individual human behaviour.

The interest in animals can be divided into two disciplines, which roughly correlate with two literary disciplines. In one of these two disciplines, animals were described in a lifelike and detailed manner, in terms of appearance and anatomy, personality traits, behaviour, habitat, food, procreation, susceptibility to disease and cures to disease. For these descriptions, scholars used the texts of antiquity, from Lucretius (†55) to Plinius the Elder (†79), Aelianus (†235) and Solinus (third/fourth century). In the first quarter of the thirteenth century, Michael Scot's Arabic-Latin translation³ led to the rediscovery of Aristotle's (†322 BC) zoology (or rather: his 'biological research program', as James Lennox⁴ put it). As a result, the methodical observation and study of animals became a veritable scientific discipline, both inside and outside of academia – in Scot's time and beyond. With his elaborate commentaries on Scot's translation and his denomination 'scientia de animalibus', Albert the Great (†1280) paved the way for zoology as a separate scientific discipline, which it eventually became in the eighteenth century. Instead of 'scientia', one might also read 'doctrina', for the text is more concluding and empirical in nature than demonstrative, as Henryk Anzulewicz⁵ has indicated. Albert deemed animal symbolism and animal metaphors important as potential auxiliary sciences to theology because they might be instrumental in elucidating famous quotations, such as Proverbs VI, 6: "Go to the ant, thou sluggard; consider her ways, and be wise."

The other of the two disciplines excelled in wondrous narrations about animals, in which rare, amazing or exotic facts about real and imaginary animals (that were often considered real)⁶ were presented for the education and entertainment of both literate and illiterate audiences⁷. This literature harked back to the rich tradition of the *Physiologus*, an antique Alexandrian anthology with a strictly biblical and moralistic character from the second century containing fifty descriptions of animals and

¹ I would like to thank Damir Klisanic for his careful English translation of this article.

² Cf. CAMILLE 1999, p. 357 n. 4; cf. ANZULEWICZ 2009, pp. 29-54.

³ Cf. VAN OPPENRAAY 1992 and 1998.

⁴ Cf. LENNOX 2001, p. 110 sqq.

⁵ Cf. ANZULEWICZ 2009, pp. 37-39.

⁶ Cf. LAZARIS 2005, pp. 142-143.

⁷ Cf. FARACI 2005, p. 125.

mythical creatures. This book, which itself was based on older sources, existed in Latin (for the clergy) and in the vernacular (for educated laymen), similar to later bestiaries in England, Germany and France⁸.

Another genre that was soon discovered was the collection of general encyclopaedic knowledge, which inspired efforts to amass as much knowledge as possible about animals. Isidorus of Sevilla (†636) laid the foundations of this new scientific discipline with his *Etymologiae*, a text that merged the traditions of the *Disciplinae* and the *Historia naturalis* of his predecessors Varro and Plinius and built on them. Hrabanus Maurus (†856) continued this work. The new genre flourished in the thirteenth century and various hybrid sub-genres came into existence, with scholars adding subjects or emending parts of the text. However, all texts invariably feature stories about animals. The most renowned exponents of this tradition are Alexander Neckham (*De naturis rerum*, ca 1190), Bartholomaeus Anglicus (*De proprietatibus rerum* ca 1235), Thomas of Cantimpré (*De natura rerum* ca 1240), and later Konrad of Megenberg (ca 1350), Arnoldus Saxo (*De floribus naturalium rerum* ca 1225) and Vincent of Beauvais (*Speculum maius*, 1240-60). These scholars would often incorporate the most recent knowledge about natural science, medicine and astrology that had become available via Arabic-Latin and later Graeco-Latin translations. The works of Aristotle, Galen, Averroes, Avicenna and many other Greek or Arabic authors thus continuously provided new source materials. Iolanda Ventura has alluded to some extraordinary encyclopaedic hybrids, such as the *Hortus sanitatis*⁹, and other collections in the late Middle Ages, and she drew attention to the difference between on the one hand scientific manuals for doctors and pharmacists and on the other hand medical encyclopaedias for the lay aristocracy, who could be entertained with the *mirabilia* and *curiositates naturae* and the stories about magic rituals with animals. Like in most other works, these books feature Latin in the technical passages, while the vernacular is used for additional passages of a more practical and entertaining nature.

The leading principle behind the literary development in the tradition of the *Physiologus*¹⁰, the bestiaries and the encyclopaedias is that both the reading of Scripture – which is, after all, sacred and a source of natural history – and the reading of the book of Nature lead to God. Therefore, both need to be studied to arrive at a more accurate understanding of God and His creation and to better understand spiritual matters. Both types of text were most frequently used during religious education and during sermons because they offered a wealth of illustrative material, as exemplified by the encyclopaedias of Bartholomaeus Anglicus and Vincent of Beauvais. The tradition of the *Physiologus*, which is based on biblical citations that are connected with theological animal interpretations, here distinguishes itself from later bestiaries, which are different in both structure and content. The interpretation of animals in the bestiaries is generally of a moral-ethical and didactic nature, and an interest in the extraordinary, the fantastic, the bizarre and the symbolic became increasingly prominent in those texts¹¹. In the fourteenth century, this discipline resulted in a plethora of opulently illustrated literature consisting of the *Physiologus*, the bestiaries, the encyclopaedias, fables and the animal epic, with on the one hand Christian and symbolic interpretations and on the other hand realistic, ornamental or generally symbolic interpretations. Apart from allegorical interpretations, medical texts also show an interesting etymological phenomenon: various diseases are named after animals (for example, *ranula*, *formica*, *polipus* and *lupus*¹²).

Manuscript illustrators play a rather interesting part in the genre because, from the twelfth or thirteenth century, these texts had been handed down in illustrated manuscripts, as was the case for books on hunting, health and agronomy. The illustrators often drew inspiration from antiquity or from biblical illustrations, but they also used new knowledge and techniques, depending on the text, when they were trying to portray its content. The bloom and peak of this practice lay in the fourteenth century.

⁸ Cf. FRADEJAS RUEDA 2005, pp. 127-140.

⁹ Cf. VENTURA 2005, pp. 213-248.

¹⁰ Cf. LAZARIS 2005, pp. 141-167.

¹¹ Cf. ZUCKER 2005, p. 329.

¹² Cf. VAN 'T LAND 2005, pp. 200-212.

Especially in the margins of manuscripts one will often find what appear to be symbolic depictions of animals and plants (flanked by superfluous or sometimes even ‘flawed’ illustrations¹³).

Michael Camille¹⁴ has indicated that for Aristotle the study of animals and plants was all part of the same study of nature, and that the marginal illustrations appear to mirror this fact. The apex of this marginal animal and plant art was reached between circa 1250 and 1320. Camille also points out that one context for the production of illustrated manuscripts might be the interest in Aristotle’s biology within the Dominican *studium* of Paris, where readers of Aristotle’s biological texts like Albertus Magnus and Thomas of Cantimpré had urged philosophers to consider the forms of creatures and delight in the artifex who made them. In this connection I point to two interesting miniatures in a Bruges manuscript¹⁵ which contains Michael Scot’s translations of both Aristotle’s and Avicenna’s animal books. In these animal books, we see a magister holding a book with one hand and pointing with another to the animals as the subject of the book, introducing Scot’s translation of Aristotle’s *De animalibus* and a doctor (-magister?¹⁶) doing the same for his translation of Avicenna’s *De animalibus*.

The work of the illustrators, as well as that of the scribes, was done in honour of God and with the purpose of instilling in people a sense of awe and love for God and His creation. Through illustrations, people became imbued with the fear of hell and consequently with the idea that living according to Christian morality was important. As a consequence, one can generally quite clearly distinguish – by examining the illustrations in manuscripts – scientific texts, in which, for instance, miniatures might depict a philosopher and his students while animals are seen as useful objects of human knowledge, and bestiaries, in which the subject is God and His creation while animals are seen as symbolic representations in the ‘Book of Nature’. Illustrations in Aristotelian texts thus performed an important function: making Aristotle’s teachings acceptable for Christian culture¹⁷. Furthermore, already existing models for illustrations in Bibles and bestiaries often effectively dictated the appearance of illustrations in the later thirteenth-century Aristotelian manuscripts since the translations of Aristotle’s zoological texts appeared too late for any original novelties, such as insects, which were not depicted until the end of the fourteenth century in a non-Aristotelian context. Miniatures were also helpful for the illiterate trying to familiarize themselves with a text. Moreover, in contemporary research, they often determine the function of a given bestiary.

A question we could ask ourselves at this point is: what exactly comprised the pleasures of knowledge for those involved in zoological science and related matters in the Middle Ages?

On the one hand, we discern those with a keen interest in science, those who devoted themselves to studying the discipline chronicled by Aristotle, and the facts, observations and conclusions contained therein. Among this group were the thirteenth-century scholars who translated Aristotle’s text on zoology into Latin: first Michael Scot (who translated from Arabic), then William of Moerbeke (who translated from the rediscovered Greek text tradition), and finally those who wrote commentaries on these texts – after David of Dinant and Petrus Hispanus Medicus – : Albertus Magnus, Henry Bate, Gérard du Breuil and Thomas Aquinas. For them, the ‘pleasures of knowledge’ would mainly have consisted of that which generally constitutes the scientist’s and philosopher’s pleasure and happiness: the satisfaction of quenching a thirst for knowledge and understanding. Aristotle accurately phrased that notion in the first sentence of his *Metaphysics*: *omnes homines natura scire desiderant* – all men by nature desire to know. In his *Ethica Nicomachea*, this notion was further elaborated, as was the possibility to philosophize about the subject. These scholars would also have derived satisfaction from the realisation that those high-quality texts that they made available would prove to be of great use, not only within the then fledgling realm of academic education, but also in the daily practice of moral theologians and preachers, and perhaps even for educated laymen and serious encyclopaedists. Michael Scot would certainly have been flattered by the satisfaction of those who commissioned his

¹³ Cf. LECLERCQ-MARX 2005, p. 182.

¹⁴ Cf. CAMILLE 1999, pp. 355-396. C. points to “the relationship between observation and philosophical inquiry set up in Aristotle’s text in which animals are seen as useful objects of human knowledge and not as they appear in the Bestiary, as symbolic representations in the ‘Book of Nature’.”

¹⁵ Bibliotheek van het Groot Seminarie 99/112.

¹⁶ About portraits of ‘the philosopher’ or ‘the magister’ in manuscript initials cf. CAMILLE 1999, pp. 357-358.

¹⁷ Cf. CAMILLE 1999, p. 375.

translations, among whom was Emperor Frederick II Hohenstaufen. They would have simply interpreted Aristotle's passionate phrasings in his zoological works as pertaining to themselves, especially passages like the one from the introduction to his *Parts of Animals*:

“Of ‘things divine’ we have already treated and have set down our views concerning them; so it now remains to speak of animals and their Nature... we will not leave out any one of them, be it never so mean; for though there are animals which have no attractiveness for the senses, yet for the eye of science, for the student who is naturally of a philosophic spirit and can discern the causes of things, Nature which fashioned them provides joys which cannot be measured ... Wherefore we must not betake ourselves to the consideration of the meaner animals with a bad grace, as though we were children; since in all natural things there is somewhat of the marvellous”¹⁸.

Aristotle's text was frequently rediscovered until well into the modern era, of which Charles Darwin's famous 1882 letter to William Ogle bears witness. Ogle had just sent Darwin a copy of his annotated English translation of Aristotle's *Parts of Animals*, and Darwin wrote: “From quotations which I had seen, I had a high notion of Aristotle's merits, but I had not the most remote notion what a wonderful man he was. Linnaeus and Cuvier¹⁹ have been my two gods, though in very different ways, but they were mere school-boys to old Aristotle.”

However, the real pleasures of knowledge can probably be found among creators in the non-scientific or quasi-scientific genre, which includes the bestiaries, encyclopaedias and hybrids of these texts, and the reading or listening public certainly shared in the joys. The ingredients of this literature – trivia and wondrous stories about plants, animals, rocks, magic and dietetics – were, together with the large amount of lavish contemporary illustrations and an iconography that sometimes harked back to late antiquity, a source of pleasure and entertainment. They must have inspired a myriad of pleasures of knowledge, both in the creators and in the owners of these occasionally genuinely priceless works.

Can we in any way reconstruct the position of Michael Scot in all of this? As far as we have been able to deduce, he belonged to the former, more scientific, category of those who found pleasure in knowledge. He was part of the important scientific circles of his time, and with his large body of translations contributed to scientific development, both during his own era and beyond it. Incidentally, among the tens of manuscripts that contain Scot's early thirteenth-century Arabic-Latin translation of Aristotle's works on zoology, only a few manuscripts from the late thirteenth or early fourteenth century contain miniatures or illustrations. The remaining parts of the manuscripts do not contain any illumination and often lack paragraphs or even correct rubrication and book numbering, unless the books were used – intensively or less intensively – in academia. However, illumination was already more common in some added texts in those manuscripts. For example, one Cambridge manuscript²⁰ containing Scot's translation does not feature any illustrations, although the added bestiary has a series of elaborate sketches, apparently preliminary studies because they are incomplete. The subsequent lapidarium completes the pleasures of knowledge for the owner of the manuscript.

We have now come to the core business of Michael Scot in Emperor Frederick II Hohenstaufen's service. Scot was the emperor's court physician, astrologer and oracle. Various drawings and illustrations providing evidence for these roles can be found in the manuscripts of his *Liber introductorius*, *Liber particularis* and *Liber Physionomie*. Scot undoubtedly enjoyed the ‘other side’ of his occupation: the magical, the medical-dietetic, and a variety of information about the animals, the plants and the cosmic world around him, so illustriously mirrored in the Court of Hohenstaufen. Apart from the occasional comment about the craft of translation, probably authored by Scot himself, such as “in arabico ‘congelatur’ et ‘coagulatur’ fere eodem significantur”²¹, there are few indications of what constituted his pleasures of knowledge. However, there is a very personal note to a passage in *Generation of Animals* that clearly demonstrates how committed Scot was to the medical profession. The note was preserved in the margins of three manuscripts, an annotation to Aristotle's description of the medical phenomenon of the *mola uteri* in women²². Here, Scot describes in amazing detail a case

¹⁸ ARIST., *Parts of Animals* I, 5, 645a4-17. Translation by A.L. PECK 1968⁴.

¹⁹ Carl Linnaeus 1707-1778; George Cuvier 1769-1832. Cf. GOTTHELF 1999, pp. 3-30.

²⁰ Gonville and Caius College Library 109/178.

²¹ ARIST., *Parts of Animals*, II, 4, ad 651a16 (cf. ed. VAN OPPENRAAY 1998, pp. 52 and 240).

²² ARIST., *Generation of Animals*, IV, 6-7, 775b-776a.

of ‘missed abortion’ in a woman named Maria, a friend of the widow of Albertus Gallus in Bologna, who offered Michael Scot lodging in the autumn of 1220. This short passage, replete with accurate medical descriptions by Scot, is still read with great admiration by gynaecologists today²³. It shows both disciplines in Scot’s life converging towards his personal fascination for a medical phenomenon scientifically described by Aristotle; all at the instigation of an exceptional medical case in his direct environment.

Nowadays, editors of Scot’s translations experience their pleasures of knowledge, which are not very different from those of their medieval colleagues. One enjoys the text and its tradition and attempts to uncover Scot’s original translation and intentions, and one derives satisfaction from the knowledge (or at least the aspiration) that the result of one’s work will stand many other scholars in good stead. Like the good scribes of yore, one cringes at the large number of mistakes that were made during translating and copying of the text, and attempts to suppress the urge to correct them. However, the greatest joy of all lies in the discovery of hidden treasures (which are currently mainly found in the field of codicology) and in the production of successful text conjectures during attempts to uncover Scot’s translation as exactly as possible, even though modern scholars might question whether these are attainable and tenable ambitions.

Michael Scot was a court physician, astrologer and translator of, among others, texts on zoology by Aristotle and Avicenna, and he also wrote various original works. This combination of functions and qualities was common in the medieval Western world, but even more common in Arabic society. There, the pleasures of knowledge proved to be abundantly present among the creators, readers and owners of zoological texts.

I conclude with two interesting parallels within the extensive genre of literature about animals, in the Arabic literary world of the period. Recently, an edition was published of the *Kitāb Manāfi’ al-Ḥayawān* (*The Book of Useful Properties from the Parts of Animals*) by Lucia Raggetti from the University of Naples. The author of this work, ‘Īsā ibn ‘Alī, was a court physician to the Abbasid Caliph al-Mu’tamid (870-892). He was a pupil of Ḥunayn ibn Iṣḥāq and involved in the translation movement of the time. He was a Nestorian Christian who spoke Syriac, and he wrote Middle Arabic, the type of Arabic used in the Arabic translation of the Aristotelian zoological text which was later translated by Michael Scot. Ibn ‘Alī’s sources were, apart from Syriac and other literature, Plinius and Byzantine source literature. Raggetti states²⁴: “This medical-zoological lore met the acceptance of the public, not only for scientific purposes, but also as literary texts that included mirabilia and magic” and, we can add, curious and amusing tales. It was the first Arabic book of this kind, and it was destined for two different kinds of readership: professionals who would use animals in medicine and the general public who were looking for amusing information about them. There were expensive and affordable editions of the manuscripts, and there was a wide variety in the textual content within the tradition history. Furthermore, the marginal notes provide us with an opportunity to determine how the readers used the texts and how the evolution of textual tradition took place.

Another edition which appeared in 2012, comprises Anna Contadini’s publication of an Arabic text that was virtually contemporaneous with Scot’s translation of Aristotle’s zoology. The title of the publication is *A Thirteenth Century Illustrated Arabic Book on Animals*²⁵. In this work we find a hybrid text, lavishly illustrated in Persian style, with zoological and medical information about animals. The text is not scientifically accurate, but it is a typical example of ‘pleasures of knowledge’: “the aim of the manuscript is, that the knowledge obtained through a thorough investigation of the animals should induce in us wonder (that is, also through the beauty of its images *AvO*) at their amazing characteristics and usefulness and an enhanced awareness of God’s creative power”²⁶. Interestingly, the captions attached to the images may contain a description statement relating the image to a particular feature of the text (the so-called explanatory captions²⁷; so no mere: ‘this is a hawk’, but an entire story about what can be seen and what is happening in the image). They are often even incorporated - as it were - in the image, for instance framing the painting along one side.

²³ Cf. O’NEILL 1973 and 1974; cf. ed. VAN OPPENRAAY 1992, pp. 244-246.

²⁴ Cf. RAGGETTI in COMSt 4 (2012), p. 7-9.

²⁵ Cf. CONTADINI 2012.

²⁶ Cf. CONTADINI 2012, p. 1. At congress I showed the book around because it is a marvel to behold: a case of pleasures of knowledge in practice.

²⁷ Contadini 2012, pp. 100-101.

So, we may conclude that the later medieval Western world of zoological and animal literature had a fascinating Syriac-Arabic-Persian counterpart, which still has many pleasant surprises in store for us, contemporary scholars.

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