

Chloe Peters

**SOME ANTS GO MARCHING TWO BY TWO, OTHERS DIG FOR
GOLD: THE TEXTUAL DESCRIPTIONS AND VISUAL
DEPICTIONS OF ANTS IN THE MEDIEVAL BESTIARY
TRADITION**

MA Thesis in Late Antique, Medieval and Early Modern Studies

Central European University Private University

Vienna

Some Ants Go Marching Two by Two, Others Dig for Gold: The Textual Descriptions and Visual Depictions of Ants in the Medieval Bestiary Tradition

by

Chloe Peters

(Canada)

Thesis submitted to the Department of Medieval Studies,
Central European University Private University, Vienna, in partial fulfillment of the
requirements of the Master of Arts degree in Late Antique, Medieval and Early Modern
Studies.

Accepted in conformance with the standards of the CEU.

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Author's declaration

I, the undersigned, **Chloe Peters**, candidate for the MA degree in Late Antique, Medieval and Early Modern Studies, declare herewith that the present thesis is exclusively my own work, based on my research and only such external information as properly credited in notes and bibliography. I declare that no unidentified and illegitimate use was made of the work of others, and no part of the thesis infringes on any person's or institution's copyright. I also declare that no part of the thesis has been submitted in this form to any other institution of higher education for an academic degree.

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Abstract

Legends of dog-sized ants that dig up gold in the desert or of ants with lion heads are only two examples of the fantastic and fictitious creatures that exist within medieval Latin bestiaries. Their appearances in these bestiaries are rare and are often overshadowed by their harmless insect counterpart, the ant. Not all chapters on the ants in Latin bestiaries include descriptions of ant-lions or gold-digging ants. However, the chapters that do pull on the literary and moral collective knowledge of these creatures to provide negative counterparts to the positive Christian exempla emphasized in the descriptions and illustrations of the three characteristics of the ant. This use of ant-lions and gold-digging ants is seen through a three-part comparative analysis of the chapters on ants in Latin bestiaries. The first part of the analysis focuses on the intertextuality of classical and medieval descriptions of ants, ant-lions, and gold-digging ants in comparison to the bestial descriptions of these ants. The second part is a comparative analysis of the chapter on ants in forty-one Latin bestiaries produced between the tenth and the fifteenth centuries in Northern Europe. The third part is a comparative analysis of the iconography of these three ants within sources in the bestiary tradition.

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List of Abbreviations

AUL	Aberdeen, Aberdeen University Library
BL	London, British Library
BnF	Paris, Bibliothèque Nationale de France
Bodl.	Oxford, Bodleian Library
BMI	Épinal, Bibliothèque Multimédia Intercommunale d'Epinal
BSB	Munich, Bayerische Staatsbibliothek
CCC	Cambridge, Corpus Christi College
CUL	Cambridge, Cambridge University Library
<i>DC</i>	<i>Dicta Chrysostomi</i>
Vat.	Vatican, Biblioteca Apostolica Vaticana

Introduction

Gold-digging ants are not the creatures one would expect to come across while translating. At least I was not expecting it, though it seems obvious now that these creatures would be included in a text entitled *Wonders of the East*. The legend of these creatures, as fun as it was to translate, was not as intriguing as the illustrations of these creatures beside the text. The images of gold-digging ants in British Library, Cotton MS Tiberius B V raised several questions for me, including the question of why they these creatures that are described as large ants in the texts would be drawn as dogs in images. In the search for the answer to this question, I realized that these creatures were not limited to fantastical texts like the *Wonders of the East* nor was their physical depiction solely that of dogs. However, none of the scholarship that I found on gold-digging ants was able to give me an actual answer, nor did they ever really focus on the different iconographical representations of these creatures.

What I did find was two other very different kinds of ants, one with a similarly fantastical background, and the other that is rarely associated with legendary stories of any nature though very popular none the less. Both ant-lions and ants are frequently mentioned in connection to gold-digging ants because of their appearance together in medieval bestiaries, but the only explanations as to why these three ants sometimes appear in the same chapter refer to the texts copied by bestiaries, such as Isidore of Seville's *Etymologiae*. These explanations overlook the fact that gold-digging ants and ant-lions are not moralized in these chapters, despite the bestiary's emphasis on moralizing the characteristics of animals. Ants themselves were models of good Christian behavior. Ants exemplified unified, cooperative, and dutiful behavior, as is described and depicted of them in Latin bestiaries. Gold-digging ants and ant-lions, however, were not models for good behavior. Their descriptions always include a tone of violence. The inclusion of the gold-digging ant and the ant-lion in chapters on ants in specific

Latin bestiaries was, therefore, to act as a negative exemplar and to display bad Christian behavior in contrast to the ant, which will be seen through a comparative analysis of the sources these ants appear in.

Sources

Numerous studies have been done on the different versions of bestiaries, their text, and their iconography, with various focuses of intertextuality, production and uses, and even monstrosities. Within these studies, if ants are mentioned it is only briefly, as the work encompasses the whole bestiary rather than focusing on a specific animal. Such works include Florence McCulloch's *Mediaeval French and Latin Bestiaries*,¹ Wilma George and Brunsdon Yapp's *The Naming of the Beasts*,² and Ron Baxter's *Bestiaries and their Users in the Middle Ages*,³ to name a few. Similarly, shorter studies focus on aspects like the intertextuality of the text, such as L.A.J. Houwen's "Animal Parallelism in Medieval Literature and the Bestiaries"⁴ and Sarah Kay's "'The English Bestiary', the Continental 'Physiologus', and the Intersections Between Them,"⁵ or a focus on the production and use of bestiaries, such as Brunsdon Yapp's "A New Look at English Bestiaries"⁶ and Ilya Dines' "Producing the Bestiary."⁷

Ants are only a part of the studies on bestiaries if those studies include a detailed description of the animals in the bestiary, otherwise they are often only mentioned in passing. McCulloch provides a general overview of what the chapter of ants includes, both textually

¹ Florence McCulloch, *Mediaeval French and Latin Bestiaries* (Chapel Hill: University of North Carolina Press, 1962).

² Wilma George and Brunsdon Yapp, *The Naming of the Beasts* (London: Duckworth, 1991).

³ Ron Baxter, *Bestiaries and their Users in the Middle Ages* (London: Sutton Publishing, 1998).

⁴ L.A.J. Houwen, "Animal Parallelism in Medieval Literature and the Bestiaries," *Neophilologus* 78, no. 3 (1994): 483-496.

⁵ Sarah Kay, "'The English Bestiary', the Continental 'Physiologus', and the Intersections Between Them," *Medium Ævum* 85, no. 1 (2016): 118-142.

⁶ Brunsdon Yapp, "A New Look at English Bestiaries," *Medium Ævum* 54, no. 1 (1985): 1-19.

⁷ Ilya Dines, "Producing the Bestiary," *Medievalista* 29 (2021): 91-116.

and iconographically, in different versions of Latin and French bestiaries,⁸ and George and Yapp provide a detailed description of the ant's characteristics as well as descriptions of the iconography of the illustrations of ants in bestiaries.⁹ Both McCulloch, as well as George and Yapp include how ant-lions and gold-digging ants appear in bestiaries, though George and Yapp also include a section specifically dedicated to the ant-lion in which they incorrectly assume gold-digging ants and ant-lions to be the same creatures.¹⁰

The two main and most important studies on the ant-lion are George Druce's "An Account of the Murmekoleon or Ant-Lion"¹¹ and Mia Gerhardt's "The Ant Lion. Nature Study and Interpretation of a Biblical Text, from the 'Physiologus' to Albert the Great."¹² Both studies provide a detailed analysis of the sources that mention ant-lions. Druce, perhaps inspiring George and Yapp, also incorrectly argues that the ant-lion and the gold-digging ant are the same creature that was told through different versions of stories from western classical authors and eastern classical authors, respectively.¹³ Despite this, his analysis is very detailed and is used as the basis for Gerhardt's article, where she expands the sources on ant-lions to include medieval sources up to Albert the Great and analyzes their intertextuality.¹⁴ Gerhardt rightly dismisses Druce's conclusion that the ant-lion and the gold-digging ant are the same animal.¹⁵

The scholarship of gold-digging ants is slightly larger than that of ants or ant-lions, though none of the works look at these creatures within the context of a bestiary. The largest and most macrohistorical study is Thomas Reimer's *Kleiner als Hunde, aber größer als*

⁸ McCulloch, *Mediaeval Bestiaries*, 81-84.

⁹ George and Yapp, *The Naming of the Beasts*, 214-5.

¹⁰ George and Yapp, *The Naming of the Beasts*, 64-5.

¹¹ George Druce, "An Account of the Murmekoleon or Ant-Lion," *The Antiquities Journal* 3 (1923): 347-364.

¹² Mia Gerhardt, "The Ant Lion. Nature Study and Interpretation of a Biblical Text, from the 'Physiologus' to Albert the Great," *Vivarium* 3 (1965): 1-23.

¹³ Druce, "An Account of the Murmekoleon or Ant-Lion," 347-364.

¹⁴ Gerhardt, "The Ant Lion," 1-23.

¹⁵ Gerhardt, "The Ant Lion," 3.

Füchse: Die Goldameisen des Herodot in which Reimer provides a survey of numerous instances where gold-digging ants were mentioned from Herodotus to the twentieth century and concludes with a discussion on what these creatures might be.¹⁶ Other scholarship has looked at gold-digging ants in the context of the early English *Wonders of the East* manuscripts, specifically Marilina Cesario's "Ant-Lore in Anglo-Saxon England"¹⁷ and Susan Kim's "Man-Eating Monsters and Ants as Big as Dogs."¹⁸ Though both of these articles are interesting and useful in their own way, Cesario's article focuses on the use of gold-digging ants as a tool of prognostication in early medieval England, and Kim's article analyzes the alienated language used in the *Wonders of the East*. Some scholarship also argues for what gold-digging ants might have been, such as Michel Peissel does in *The Ants' Gold: The Discovery of the Greek El Dorado in the Himalayas*¹⁹ where he contends that these creatures may have been marmots,²⁰ though determining what animal gold-digging ants may have been is outside the scope of this thesis.

The *Physiologus*

Since the majority of the sources analyzed in this thesis are Latin bestiaries, it is necessary to understand the development of bestiaries. Bestiaries were based on a version of the *Physiologus*, a pseudo-scientific, theological text originally written in Greek, that describes characteristics of various animals that are exemplars of Christian behavior.²¹ Rather than being a scientific work on various animals, its purpose was to propagate theological and moral

¹⁶ Thomas Reimer, *Kleiner als Hunde, aber größer als Füchse: Die Goldameisen des Herodot* (Münster: Nodus Publikationen, 2005).

¹⁷ Marilina Cesario, "Ant-Lore in Anglo-Saxon England," *Anglo-Saxon England* 40 (2012): 273-291.

¹⁸ Susan Kim, "Man-Eating Monsters and Ants as Big as Dogs," in *Animals and the Symbolic in Mediaeval Art and Literature*, ed. L.A.J.R. Houwen (Groningen: Egbert Forsten, 1997), 39-52.

¹⁹ Michel Peissel, *The Ants' Gold: The Discovery of the Greek El Dorado in the Himalayas* (London: Harvill, 1984).

²⁰ Peissel, *The Ants' Gold*, 147.

²¹ McCulloch, *Mediaeval Bestiaries*, 15.

teachings through the extraordinary stories presented in the chapters.²² The exact origin of the Greek *Physiologus* is unknown, though it was probably compiled in Alexandria around the end of the second or the beginning of the third century C.E.²³ The Greek *Physiologus* is comprised of around forty-nine chapters on various animals and stones,²⁴ which were made up of information from sources written by various classical and Christian authors, as well as from the Bible and fables.²⁵ Though four recensions of the Greek *Physiologus* exist,²⁶ the original manuscript does not, and there is no way of knowing if the original work was illustrated.²⁷

The *Physiologus* was translated into Latin around the fourth or fifth century,²⁸ as its existence is proven by its use in Ambrose's description of the Partridge in his *Hexaemeron*.²⁹ Similarly, the Latin versions of the *Physiologus* that survive from the eighth and ninth centuries use quotations from a version of the Bible that predates the Vulgate of Jerome, completed around 400 C.E.³⁰ Several versions of the Latin *Physiologus* exist, each of which contain the same general material, but there are some differences in animals and in length.³¹ Though the original Latin copy of the *Physiologus* does not survive, the four main versions – that of A, B, C, and Y – are the earliest that survive, having been copied between the eighth and tenth centuries.³² For the purposes of this study, the most important versions of the *Physiologus* are Y and B, as version Y is the closest Latin version to the original Greek text,³³ and version B

²² Caroline Macé and Jost Gippert, "Preface," in *The Multilingual Physiologus: Studies in the Oldest Greek Recension and Its Translations*, eds. Caroline Macé and Jost Gippert (Belgium: Breopls, 2021), 16.

²³ Brunsdon Yapp, "Introduction," in *The Naming of the Beasts*, by Wilma George and Brunsdon Yapp (London: Duckworth, 1991), 1; McCulloch, *Mediaeval Bestiaries*, 17-8; Ilya Dines, "Latin Bestiaries," *The Encyclopedia of Medieval Literature in Britain*, eds. Siân Echard and Robert Rouse (John Wiley & Sons, 2017), DOI: 10.1002/9781118396957.wbemlb232, 1; Dines, "Producing the Bestiary," 91.

²⁴ McCulloch, *Mediaeval Bestiaries*, 15; Dines, "Producing the Bestiary," 91.

²⁵ Dines, "Latin Bestiaries," 1.

²⁶ Horst Schneider, "Introduction to the *Physiologus*," in *The Multilingual Physiologus: Studies in the Oldest Greek Recension and Its Translations*, eds. Caroline Macé and Jost Gippert, 31-48 (Belgium: Breopls, 2021), 31.

²⁷ Dines, "Producing the Bestiary," 91.

²⁸ Dines, "Producing the Bestiary," 91.

²⁹ McCulloch, *Mediaeval Bestiaries*, 21.

³⁰ Yapp, "Introduction," 2.

³¹ McCulloch, *Mediaeval Bestiaries*, 21.

³² Dines, "Latin Bestiaries," 1.

³³ McCulloch, *Mediaeval Bestiaries*, 22.

served as the basis for all western medieval bestiaries, including both the Latin bestiaries as well as bestiaries written in vernacular languages.³⁴ Two of the surviving copies of the *Physiologus* from the ninth or tenth centuries – that of Bern, Burgerbibliothek, MS 318 and Brussels, Bibliothèque Royale, MS 10066-77 – are illustrated.³⁵

Latin Bestiaries

Several attempts at categorizing Latin bestiaries have been made with various levels of acceptance among bestiary scholars. The first division was made by M. R. James in 1928, who divided Latin bestiaries into four “families” according to the similarities in their text.³⁶ In this work, James categorized forty-one manuscripts into these families, as well as provided short codicological descriptions on thirty-six of the bestiaries and including any details specific to the individual bestiaries.³⁷ The next division was made by McCulloch in 1960 who subdivided James’ First Family group of bestiaries into three categories: B-Is, H, and Transitional.³⁸ McCulloch also added more Latin bestiaries to the four family classification that had been missed by James, and organized the French bestiary manuscripts separately.³⁹ McCulloch’s changes have been generally accepted by most bestiary scholars. The next changes to this categorization came from Brunsdon Yapp in 1985 who subdivides James’ Second Family group of bestiaries into the subfamilies of A, B, C, and D.⁴⁰ Yapp and George continue this categorization in 1991, though they eliminate McCulloch’s H version completely from their categorization.⁴¹ Neither Yapp’s nor George and Yapp’s changes to the categorization were

³⁴ Dines, “Latin Bestiaries,” 1.

³⁵ Dines, “Producing the Bestiary,” 91.

³⁶ M. R. James, *The Bestiary: Being A Reproduction in Full of Ms. li 4. 26 in the University Library, Cambridge, with supplementary plates from other manuscripts of English origin, and a preliminary study of the Latin bestiary as current in England* (Oxford: Roxburghe Club, 1928); Dines, “Latin Bestiaries,” 1.

³⁷ Baxter, *Bestiaries and their Users*, 11-2.

³⁸ McCulloch, *Mediaeval Bestiaries*, 25-35.

³⁹ McCulloch, *Mediaeval Bestiaries*, 25-69; David Badke, “Bestiary Families,” *The Medieval Bestiary*, accessed May 16, 2022, https://bestiary.ca/articles/family/mf_intro.htm.

⁴⁰ Yapp, “A New Look at English Bestiaries,” 1-19.

⁴¹ George and Yapp, *The Naming of the Beasts*.

overly accepted.⁴² Willene Clark and Meradith McMunn updated the lists of bestiaries for each category in 1989 in *Beasts and Birds of the Middle Ages*, though they kept the same categorization as defined by McCulloch.⁴³ Ron Baxter, in 1998, questioned many of the classifications in this system, calling it a “considerable simplification of the complex of changes undergone by the Bestiary,”⁴⁴ though he still employed this system in his analysis in *Bestiaries and their Users in the Middle Ages*.⁴⁵ Finally, Ilya Dines, in his 2012 “The Problem of the *Transitional Family* of Bestiaries,” proposed that this family was not a homogenous group of manuscripts but was rather made up of four different subfamilies and should be placed after Second Family bestiaries.⁴⁶

In this study, I analyze forty-one bestiary manuscripts from most of the families of bestiaries, apart from the Fourth Family, as well as *Dicta Chrysostomi* (DC) versions of Latin bestiaries. For the purposes of this paper, I follow the family categorization of bestiaries defined by McCulloch to emphasize the similarities between specific bestiaries. Of these forty-one manuscripts, four are First Family, B-Is, two are First Family, H, five are First Family, Transitional, sixteen are Second Family, one is Third Family, and thirteen are DC versions. Twenty-eight of these forty-one bestiaries are illustrated.⁴⁷ All of the bestiaries I use in my analysis are digitized and fully accessible online, and their family classification are based on the information provided on the specific manuscript in David Badke’s database The Medieval Bestiary.⁴⁸

⁴² Badke, “Bestiary Families.”

⁴³ Willene B. Clark and Meradith T. McMunn, *Beasts and Birds of the Middle Ages: The Bestiary and its Legacy* (Philadelphia: University of Pennsylvania Press, 1989).

⁴⁴ Baxter, *Bestiaries and their Users*, 87.

⁴⁵ Baxter, *Bestiaries and their Users*.

⁴⁶ Ilya Dines, “The Problem of the *Transitional Family* of Bestiaries,” *Reinardus Yearbook of the International Reynard Society* 24 (2012): 29-52.

⁴⁷ Though I mention some of the production dates and locations of some of the bestiaries I use when I describe the different bestiary families, I have included a more detailed chart in the appendix.

⁴⁸ David Badke, The Medieval Bestiary: Animals in the Middle Ages, last updated April 29, 2022, <https://bestiary.ca/index.html>.

The four families of bestiaries are divided by what sources they take their content from. As mentioned above, McCulloch divided the First Family group into the subfamilies of B-Is, H, and Transitional. The First Family, B-Is version of Latin Bestiaries are made up of bestiaries that have the same chapter order and content of version B of the *Physiologus*, but also contain excerpts from Isidore of Seville's *Etymologiae* at the end of the chapter.⁴⁹ The production of these bestiaries was between the tenth and the thirteenth centuries.⁵⁰ The four B-Is bestiaries I use in this study are:

Vatican, Biblioteca Apostolica Vaticana, Pal. lat. 1074

London, British Library, Stowe MS 1067

Paris, Bibliothèque Nationale de France, Nouv. Acq. Lat. 873

Cambridge, Corpus Christi College, MS 22

These bestiaries are listed in chronological order, as Pal lat. 1074 was produced between the tenth and the eleventh century in France,⁵¹ and the other three were produced in the twelfth century in England.⁵² The First Family, H version of bestiaries are based on the B-Is version and have similar content, but the Isidorian excerpts are placed at the beginning of the chapter rather than the end, and the order and text follows Book II of *De bestiis et aliis rebus* of the Pseudo-Hugo of Saint Victor.⁵³ Clark suggests that the H group of bestiaries are of Parisian origin.⁵⁴ In the manuscripts where H version bestiaries appear, the bestiaries are usually

⁴⁹ McCulloch, *Mediaeval Bestiaries*, 28-9.

⁵⁰ David Badke, "Bestiary Families – Latin."

⁵¹ David Badke, "Biblioteca Apostolica Vaticana, Pal lat.1074," The Medieval Bestiary, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu2243.htm>.

⁵² David Badke, "British Library, Stowe MS 1067," The Medieval Bestiary, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu971.htm>; David Badke, "Bibliothèque Nationale de France, Nouv. acq. lat. 873," The Medieval Bestiary, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu1042.htm>; David Badke, "Corpus Christi College, MS 22," The Medieval Bestiary, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu936.htm>.

⁵³ McCulloch, *Mediaeval Bestiaries*, 30-33.

⁵⁴ Willene B. Clark, "The Aviary-Bestiary at the Houghton Library, Harvard," in *Beasts and Birds of the Middle Ages*, eds. Willene B. Clark and Meradith T. McMunn, 26-52 (Philadelphia: University of Pennsylvania Press, 1989), 33.

preceded by an *Aviaryum*,⁵⁵ which is based off of Book I of *De bestiis et aliis rebus*.⁵⁶ All manuscripts in this group were produced in the late thirteenth century.⁵⁷ The two H bestiaries used in this thesis are:

Valenciennes, Bibliothèque Municipale de Valenciennes, MS 101

Paris, Bibliothèque Nationale de France, Lat. 14429

The third subgroup, First Family, Transitional, is made up of bestiaries that contain characteristics of both First Family and Second Family manuscripts. These bestiaries include the first twenty-four to forty chapters included in First Family bestiaries, following the order and texts of either B-Is or H bestiaries, though these chapters are then followed by sections from Isidore's *Etymologiae*.⁵⁸ The chapters of these bestiaries are organized by type of animal, i.e. beasts, birds, and fish, which is a characteristic of Second Family bestiaries.⁵⁹ It is because of these characteristics that Dines places the Transitional Family bestiaries after the Second Family bestiaries.⁶⁰ Transitional versions of bestiaries were produced between the twelfth and the fourteenth centuries.⁶¹ The Transitional bestiaries that I analyze in this study are:

New York, Pierpont Morgan Library, MS M 81

London, British Library, Royal MS 12 C XIX

Los Angeles, Getty Museum, MS 100

Munich, Bayerische Staatsbibliothek, Gall. 16

London, British Library, Royal MS 2 B VII

⁵⁵ Dines, "Latin Bestiaries," 2.

⁵⁶ McCulloch, *Mediaeval Bestiaries*, 30-33.

⁵⁷ Badke, "Bestiary Families – Latin."

⁵⁸ McCulloch, *Mediaeval Bestiaries*, 33-4.

⁵⁹ McCulloch, *Mediaeval Bestiaries*, 33-4.

⁶⁰ Ilya Dines, "The Problem of the *Transitional Family* of Bestiaries," 29-52.

⁶¹ Badke, "Bestiary Families – Latin."

These five bestiaries are also listed in chronological order, as MS M 81 dates to the late twelfth century,⁶² Royal MS 12 C XIX to the early thirteenth century,⁶³ MS 100 to the mid-thirteenth century,⁶⁴ and Gall. 16 and Royal MS 2 B VII,⁶⁵ both of which are marginal bestiaries within psalters, to the early fourteenth century.

Second Family bestiaries make up the largest family of Latin bestiaries. Bestiaries in this family have more than double the amount of chapters of First Family bestiaries,⁶⁶ consisting of around 115 chapters with chapters taken from the works of Isidore and Solinus.⁶⁷ Some of the main characteristics of Second Family bestiaries include chapters organized with the same divisions found in Book XII of Isidore's *Etymologiae*, additional material copied from the works of Solinus, chapters without "moral or spiritual exposition,"⁶⁸ and occasionally chapters that include citations from other classical authors, such as Ovid, Lucan, and Lactantius, are included in part of the quotations from Isidore.⁶⁹ Second Family bestiaries were produced between the twelfth and the fifteenth centuries. The sixteen Second Family bestiaries that are analyzed in this study, also listed chronologically, are:

London, British Library, Additional MS 11283

Oxford, Bodleian Library, MS Ashmole 1511

Aberdeen, Aberdeen University Library, MS 24

⁶² David Badke, "Pierpont Morgan Library, MS M.81 (The Worksof Bestiary)," The Medieval Bestiary, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu1046.htm>.

⁶³ David Badke, "British Library, Royal MS 12 C XIX," The Medieval Bestiary, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu978.htm>.

⁶⁴ David Badke, "Getty Museum, MS. 100 (The Northumberland Bestiary)," The Medieval Bestiary, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu2886.htm>.

⁶⁵ David Badke, "Bayerische Staatsbibliothek, Gall.16 (Psalter of Isabelle of France)," The Medieval Bestiary, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu1730.htm>; David Badke, "British Library, Royal MS 2 B VII (The Queen Mary Psalter)," The Medieval Bestiary, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu973.htm>.

⁶⁶ McCulloch, *Mediaeval Bestiaries*, 34.

⁶⁷ Dines, "Latin Bestiaries," 2.

⁶⁸ McCulloch, *Mediaeval Bestiaries*, 35; James, *The Bestiary*, 14.

⁶⁹ Willene B. Clark, *A Medieval Book of Beasts: The Second-Family Bestiary* (Woodbridge: The Boydell Press, 2006), 26.

Cambridge, Cambridge University Library, MS li.4.26

London, British Library, Royal MS 12 F XIII

Oxford, Bodleian Library, MS Bodley 764

London, British Library, Harley MS 3244

London, British Library, Harley MS 4751

Paris, Bibliothèque Nationale de France, Lat. 3630

Le Mans, Bibliothèque Municipale de Le Mans, MS 84

Paris, Bibliothèque Nationale de France, Lat. 11207

Paris, Bibliothèque Nationale de France, Lat. 6838B

Vatican, Biblioteca Apostolica Vaticana, Reg. Lat. 258

New York, Pierpont Morgan Library, MS M 890

Cambridge, Corpus Christi College, MS 53

Copenhagen, Koninklijke Bibliotek, Gl. Kgl. 1633-4

Of these sixteen bestiaries, Additional MS 11283 was produced in the late twelfth century,⁷⁰ MS M 890, and CCC, MS 53 were produced in the fourteenth century,⁷¹ and Gl. Kgl. 1633-4 was produced in the fifteenth century.⁷² All of the other twelve bestiaries were produced in the thirteenth century.

Third and Fourth Family bestiaries are even larger than Second Family bestiaries, containing around 160 chapters.⁷³ The Third and Fourth Family bestiaries are less common than First and Second Family bestiaries.⁷⁴ Third Family bestiaries also separate their chapters by animals – domestic animals, beasts, fish, snakes, insects – like that of Second Family

⁷⁰ David Badke, “British Library, Additional MS 11283,” *The Medieval Bestiary*, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu980.htm>.

⁷¹ David Badke, “Pierpont Morgan Library, MS M.890 (Fountains Abbey Bestiary),” *The Medieval Bestiary*, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu1515.htm>; David Badke, Corpus Christi College, MS 53 (The Peterborough Psalter and Bestiary),” *The Medieval Bestiary*, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu937.htm>.

⁷² David Badke, “Kongelige Bibliotek, GKS 1633 4° (Bestiary of Ann Walsh),” *The Medieval Bestiary*, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu94.htm>.

⁷³ Dines, “Latin Bestiaries,” 3; McCulloch, *Mediaeval Bestiaries*, 38.

⁷⁴ McCulloch, *Mediaeval Bestiaries*, 38.

bestiaries, but these bestiaries contain whole extracts from Isidore, Bernard Silvestris, Seneca, and John of Salisbury before and after the section of bestiary chapters.⁷⁵ All Third Family bestiaries are from the thirteenth century. The only digitized and accessible Third Family bestiary is Cambridge, Cambridge University Library, MS Kk.4.25, which was produced in England between 1220 and 1240.⁷⁶ The category of Fourth Family bestiaries consists of one manuscript, that of Cambridge, Cambridge University Library, Gg.6.5, made in England in the fifteenth century,⁷⁷ but it is not digitized and accessible online and is, therefore, not a part of this thesis.

The final group of Latin bestiaries that are used in this thesis are the *DC* versions, though these are not a part of James and McCulloch's bestiary family categorization. The *DC* bestiary differs in details and order from *Physiologus* B, and its authorship is attributed to the early-fifth-century Patriarch of Constantinople, John Chrysostom.⁷⁸ *DC* bestiaries generally include twenty-seven chapters, though many copies of these bestiaries have a variety of additional chapters.⁷⁹ The original *DC* version is believed to have originated in France around the turn of the eleventh century, however, surviving manuscripts date to between the twelfth and fifteenth centuries, many of which were produced in Germany.⁸⁰ The thirteen *DC* bestiaries used in this analysis are:

New York, Pierpont Morgan Library, MS M 832

Munich, Bayerische Staatsbibliothek, Clm 536

Épinal, Bibliothèque Multimédia Intercommunale d'Epinal, MS 209

⁷⁵ Badke, "Bestiary Families – Latin."

⁷⁶ David Badke, "Cambridge University Library, Kk. 4. 25," The Medieval Bestiary, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu946.htm>.

⁷⁷ Badke, "Bestiary Families – Latin"; David Badke, "Cambridge University Library, Gg. 6. 5 (Liber de Bestiis et Aliis rebus)," The Medieval Bestiary, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu944.htm>.

⁷⁸ McCulloch, *Mediaeval Bestiaries*, 41.

⁷⁹ McCulloch, *Mediaeval Bestiaries*, 42.

⁸⁰ Badke, "Bestiary Families – Latin."

Linz, Österreichische Landesbibliothek, Hs.-33

Leipzig, Universitätsbibliothek Leipzig, Ms 351

Vienna, Österreichische Nationalbibliothek, Cod. 13378

Munich, Bayerische Staatsbibliothek, Clm 2655

Munich, Bayerische Staatsbibliothek, Clm 14348

Paris, Bibliothèque Nationale de France, Lat. 10448

London, British Library, Sloane MS 278

Munich, Bayerische Staatsbibliothek, Clm 6908

Munich, Bayerische Staatsbibliothek, Clm 14216

Leipzig, Universitätsbibliothek Leipzig, Ms 1305

Of these thirteen bestiaries, MS M 832 and Clm 536 were produced in the twelfth century,⁸¹ MS 209 and Hs.-33 were produced between the twelfth and the thirteenth centuries,⁸² Clm 6908 was produced in the fourteenth century,⁸³ and Clm 14216 and Ms 1305 were produced in the fifteenth century.⁸⁴ The other six were all produced in the thirteenth century.

Ant Iconography

The other significant part of this analysis on ants, ant-lions, and gold-digging ants is a semiotic analysis of medieval images of these creatures. Just as bestiaries served multiple functions and the information was used for different purposes, so too were images of beasts in these bestiaries designed with multiple functions in mind. As Michael Baxandall summarizes,

⁸¹ David Badke, "Pierpont Morgan Library, MS M.832 (De naturis bestiarum)," *The Medieval Bestiary*, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu1507.htm>; David Badke, "Bayerische Staatsbibliothek, Clm 536," *The Medieval Bestiary*, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu101092.htm>.

⁸² David Badke, "Bibliothèque Multimédia Intercommunale d'Epinal, MS 209," *The Medieval Bestiary*, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu101533.htm>; David Badke, "Österreichische Landesbibliothek, Hs.-33," *The Medieval Bestiary*, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu101267.htm>.

⁸³ David Badke, "Bayerische Staatsbibliothek, Clm 6908 (Fürstenfelder Physiologus)," *The Medieval Bestiary*, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu5537.htm>.

⁸⁴ David Badke, "Bayerische Staatsbibliothek, Clm 14216," *The Medieval Bestiary*, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu101126.htm>; David Badke, "Universitätsbibliothek Leipzig, Ms 1305," *The Medieval Bestiary*, accessed May 16, 2022, <https://bestiary.ca/manuscripts/manu100978.htm>.

medieval images served multiple purposes: to provide instruction for the illiterate, to provoke emotion in the viewer, and as mnemonic devices.⁸⁵ The third chapter of this thesis will focus on an analysis of the images of the three kinds of ants mentioned in the group of Latin bestiaries chosen for this study. This chapter will follow the framework put forth in Debra Hassig's *Medieval Bestiaries: Text, Image, Ideology*⁸⁶ where she distinguishes between portrait, narrative, and allegorical bestiary imagery in a semiotic analysis of the iconography of several animals found in bestiaries to explain how different medieval audiences perceived the meaning and purpose of bestiaries. While the outcome of this thesis is simply to understand the treatment of ants in medieval bestiaries, Hassig's art-historical analysis of various images from bestiaries aided in the analysis of ant iconography from both Latin bestiaries and other medieval sources.

The Aim of this Thesis

In this thesis, I argue that ant-lions and gold-digging ants were included in some chapters on ants in medieval bestiaries to provide negative exempla, contrasting with the good behavioral characteristics of the ant. To do this, my first chapter analyzes the intertextuality between the chapter on ants in bestiaries with various geographical, encyclopedic, and pseudo-scientific texts created in both the classical and medieval periods, as well as philosophical dialogues, poetry, fables, and religious commentaries, to give an idea of how these three types of ants and their characteristics were understood by classical and medieval authors. In my second chapter, I argue that Latin bestiaries consistently used the chapter on ants to illustrate positive behavior, and sometimes negative behavior, through a comparative analysis of the corpus of forty-one Latin bestiaries I compiled. I also argue that the order of animal chapters, specifically of those that precede and follow the chapter on ants, was intentional in some

⁸⁵ Michael Baxandall, *Painting and Experience in Fifteenth-Century Italy. A Primer in the Social History of Pictorial Style* (Oxford and New York: Oxford University Press, 1988), 41.

⁸⁶ Debra Hassig, *Medieval Bestiaries: Text, Image, Ideology* (Cambridge: Cambridge University Press, 1995).

bestiaries to emphasize the behavior that these animals exemplify. Finally, in my third chapter, I show how the different treatment of images of the various types of ants further emphasizes the behaviors described in bestiaries through an analysis of the iconography of the ant, ant-lion, and gold-digging ant both in medieval bestiaries and in other manuscripts within the bestiary tradition.

Chapter 1 – The Stories of Ants

Descriptions of and references to ants, ant-lions, and gold-digging ants appear in numerous classical and medieval sources. Each type of ant is referenced in regard to the specific characteristics they are known for, though it is only the ant's characteristics that are used as models of Christian behavior in medieval bestiaries. Ant-lions are mentioned only briefly in some chapters of the medieval bestiary, but in the *Physiologus* it is the ant-lions' dual nature that provides a negative allegory of bad Christian behavior. Gold-digging ants, however, are not mentioned in the *Physiologus* and are only described in the story of their legendary nature. Therefore, the characteristics of gold-digging ants are not moralized in the same way as their ant and ant-lion counterparts. Yet, their story is one of violence, and even though it is not moralized in the *Physiologus* or in medieval bestiaries, it is the hoarding and violence gold-digging ants are known for that provide the example of negative behavior. The intertextuality of the descriptions of ants, ant-lions, and gold-digging ants in both classical and medieval sources reflect the medieval association of good and bad with the characteristics of each kind of ant mentioned in bestiaries, and it is with this association that some bestiaries included ant-lions and gold-digging ants in their descriptions of ants.

1.1 *Formicae* – Ants

Ants are the only insects that were consistently considered to be animals, or beasts, within the medieval bestiary tradition. Though chapters on other insects, such as bees, crickets, scorpions, and spiders, appear in later, more thorough bestiaries such as Third and Fourth Family bestiaries, ants are the only insect whose chapter appears in every version of Latin bestiaries, and in most versions of the *Physiologus*. These chapters of ants describe three characteristics of ants and their corresponding allegories. As works of natural history that copy the same text from similar sources, all of which trace back to the *Physiologus*, there is little

variation between the bestial descriptions of these characteristics and allegories. However, the assumed allegories attributed to these characteristics extends beyond the *Physiologus* and medieval bestiaries, as references to them can be found in various geographical, encyclopedic, pseudo-scientific, political, and religious texts, as well as in poetry and fables produced in antiquity. The references to ants in these texts focus on the main characteristics of ants as exemplars of good behavior, though some of these authors also use the ant's general ability of gathering food for the winter as an example of a good form of wealth. No matter what, classical authors use the characteristics of ants as examples of good behavior for humanity, and the ant's consistent appearance in medieval bestiaries shows that this understanding of the moral exemplar of ants continued into the medieval period.

The first characteristic of ants, described as their first nature in both bestiaries and the *Physiologus*, is their ability to work in unison to gather food. Both the Y version of the *Physiologus* and Aberdeen University Library, MS 24 (the Aberdeen Bestiary) describe this characteristic of how “ants walk in order, each one carrying a grain in his mouth. The ants who have nothing do not say to the others, ‘Give us your grain’, but they pass over the tracks of others and reach a place where they find the grain; taking it up, they carry it off to their dwelling.”⁸⁷ However, the moralization of this characteristic differs between the *Physiologus* and the Aberdeen Bestiary. The Aberdeen Bestiary provides a general statement on what this characteristic represents, stating: “Let this description serve to signify sensible men, who, like the ants, act in unity, as a result of which they will be rewarded in the future.”⁸⁸ The *Physiologus*, however, emphasizes this moralization with a summary of the parable of the ten virgins from Matthew 25:8: “woe to those virgins who beseeched the wise ones, saying, ‘Give us oil from your lamps, since ours are going out.’ The others, however, heard them and being

⁸⁷ *Physiologus*, 14; *Physiologus*, trans. Michael J. Curley (Chicago: University of Chicago Press, 1979), 20.

⁸⁸ Aberdeen, Aberdeen University Library, MS 24, fol. 24v, <https://www.abdn.ac.uk/bestiary/ms24/f24v>.

reasonable and intelligent said, ‘We cannot, for perhaps there will not be enough for us and for you.’”⁸⁹ Version B of the *Physiologus* provides a longer discussion on this allegory, where the text comments on the ingenuity of the ants and how the foolish virgins should have followed their lead.⁹⁰ Despite the differences in moralization between the Aberdeen Bestiary and the *Physiologus*, both explain how the first characteristic of the ant exemplifies the good behavior of working with people in unison.

The first characteristic of ants is referenced in classical sources on natural history, specifically Pliny the Elder’s *Naturalis Historia* and Aelian’s *De Natura Animalium*. However, unlike the direct explanation of the allegory in the *Physiologus* and in bestiaries, the moralization of the characteristic in *Naturalis Historia* and *De Natura Animalium* is inferred rather than stated. In the *Naturalis Historia*, a first-century C.E. proto-encyclopedia describing the natural world, Pliny the Elder describes how ants “shar[e] their labour as do bees, but bees make the food stuffs, where as ants collect theirs.”⁹¹ Similarly, in *De Natura Animalium*, a late second- or early third-century C.E. collection of animal characteristics based on both facts and beliefs written by earlier Greek authors,⁹² Aelian describes this characteristic as well:

Ants assemble in companies, going in single file or two abreast – indeed they sometimes go three abreast – after quitting their homes and customary shelters. Then they pick out some of the barley and the wheat and all follow the same track. And some go to collect the grain, others carry the load, and they get out of each other’s way with the utmost deference and consideration, especially those that are not laden for the benefit of those that are.⁹³

⁸⁹ *Physiologus*, 14; *Physiologus*, trans. Michael J. Curley, 20.

⁹⁰ *Physiologus*, 14; *Physiologus*, trans. Michael J. Curley, 21.

⁹¹ Pliny the Elder, *Naturalis Historia*, 11.36; Pliny, *Natural History, Volume III: Books 8-11*, trans. H. Rackham, Loeb Classical Library 353 (Cambridge, MA: Harvard University Press, 1940), 499.

⁹² “Aelian, *On Animals*, Volume I: Books 1-5,” Loeb Classical Library, accessed May 8, 2022, <https://www.loebclassics.com/view/LCL446/1958/volume.xml>.

⁹³ Aelian, *De Natura Animalium*, 2.25; Aelian, *On Animals, Volume I: Books 1-5*, trans. A. F. Scholfield, Loeb Classical Library 446 (Cambridge, MA: Harvard University Press, 1958), 125.

Both examples reference how ants work together to collect their food, but do not explicitly mention that this is an example of good behavior.

Unlike that of Pliny and Aelian, there are some examples of the first characteristic of ants being mentioned in classical sources specifically for the allegorical nature of ants working together in unity. This reference appears in three philosophic dialogues by Cicero, Dio Chrysostom, and Quintilian, who use the understanding of this characteristic of ants to describe how people should act. Cicero references this characteristic of ants in his first-century B.C.E. dialogue *De Finibus Bonorum et Malorum* when he is discussing how people need to feel akin to each other so they can work together in unity for the good of humanity as “also the ant, the bee, the stork, do certain actions for the sake of others besides themselves.”⁹⁴ Dio Chrysostom, in his *Oratio 40*, written in the late first or early second century C.E., also references this characteristic of ants in a similar manner, comparing the behavior of men to the behavior of ants: “For human beings often come to blows on meeting one another, and before they part they have exchanged abusive language; yet the ants, although they go about in such swarms, never bother one another, but quite amicably meet and pass and assist each other.”⁹⁵ Quintilian, too, compares the behavior of ants to the behavior of humans in his first-century C.E. oratorical guide *Institutio Oratoria*: “if you were encouraging someone to take up public service, you could show that bees and ants, which are not only dumb animals but are very tiny, nevertheless work together in common.”⁹⁶ All three of these examples show the same understanding of the allegorical nature of the ants’ first characteristic in the same way this characteristic is moralized in medieval bestiaries.

⁹⁴ Cicero, *De Finibus Bonorum et Malorum*, 3.19; Cicero, *On Ends*, trans. H. Rackham, Loeb Classical Library 40, (Cambridge, MA: Harvard University Press, 1914), 281-3.

⁹⁵ Dio Chrysostom, *Oratio 40.32*; Dio Chrysostom, *Discourses 37-60*, trans. H. Lamar Crosby, Loeb Classical Library 376, (Cambridge, MA: Harvard University Press, 1946), 139.

⁹⁶ Quintilian, *Institutio Oratoria*, 5.11; Quintilian, *The Orator's Education, Volume II: Books 3-5*, ed. and trans. Donald A. Russell, Loeb Classical Library 125, (Cambridge, MA: Harvard University Press, 2002), 445.

The second characteristic of ants is their behavior of separating food within their anthills so it does not germinate, which is described similarly in both the *Physiologus* and the Aberdeen Bestiary. The Aberdeen Bestiary describes how an ant, “when it stores grain in its nest, it divides its supply in two, lest by chance it should be soaked in the winter rains, the seed germinate and the ant die of hunger.”⁹⁷ Again, the moralization of this characteristic in the Aberdeen Bestiary and the *Physiologus* are the same: “In the same way, you, O man, should keep separate the words of the Old and the New Testament, that is, distinguish between the spiritual and the carnal, lest the law interpreted literally should kill you, for the law is a spiritual thing.... For the Jews, who paid attention only to the letter of the law and scorned its spiritual interpretation, have died of hunger.”⁹⁸ There are only small differences between the Aberdeen Bestiary’s and the *Physiologus*’ description of this characteristic. The first is that the Aberdeen Bestiary only quotes one biblical passage, that of 2 Corinthians 3:6, whereas the *Physiologus* quotes both 2 Corinthians 3:6 and Romans 7:14.⁹⁹ The other difference is that version B of the *Physiologus* finishes the same moralization as above with: “...transcend the killing letters toward the life-giving spirit, lest while the letter is germinating on a winter’s day you die of hunger.”¹⁰⁰ Here, the separation of meaning between the literal and spiritual is in preparation for the Day of Judgement which is represented by “winter’s day.”¹⁰¹

The second characteristic of the ant, as described by both the Aberdeen Bestiary and the *Physiologus*, is also referenced by Pliny and Aelian in their works on natural history, immediately following their description of the first characteristic of ants. Pliny explains how “[ants] nibble their seeds before they store them away, so that they may not sprout up again out of the earth and germinate; they divide the larger seeds so as to get them in; when they have

⁹⁷ AUL, MS 24, fol. 24v; cf. *Physiologus*, 14; *Physiologus*, trans. Michael J. Curley, 21.

⁹⁸ AUL, MS 24, fol. 24v; cf. *Physiologus*, 14; *Physiologus*, trans. Michael J. Curley, 21.

⁹⁹ AUL, MS 24, fol. 24v; *Physiologus*, 14; *Physiologus*, trans. Michael J. Curley, 21.

¹⁰⁰ *Physiologus*, 14; *Physiologus*, trans. Michael J. Curley, 21.

¹⁰¹ McCulloch, *Mediaeval Bestiaries*, 82.

been wetted by rain they bring them out and dry them.”¹⁰² Aelian illustrates this process in a similar way:

Then they return to their dwellings and fill the pits in their store-chamber after boring through the middle of each grain. What falls out becomes the Ant’s meal at the time; what is left is infertile. This is a device on the part of these excellent and thrifty housekeepers to prevent the intact grain from putting out shoots and sprouting afresh when the rains have surrounded them, and to preserve themselves in that case from falling victims during the winter to want of food and to famine, and their zeal from being blunted.¹⁰³

Both Pliny and Aelian describe how ants separate the grains into two parts when they bring the grain back to their anthills so that if the grain gets wet, the grain will not germinate and the ants source of food will not disappear, in a similar way to how this characteristic is described in the Aberdeen Bestiary and in the *Physiologus*.

Unlike the first two characteristics of the ant, the third is not often referenced by classical authors. The third characteristic of the ant is the ants’ ability to distinguish between grains of wheat and grains of barley. Again, both the Aberdeen Bestiary and the *Physiologus* describe this characteristic similarly. The Aberdeen Bestiary explains how “at harvest time it walks through the crop and finds out by nibbling the ears whether it is barley or wheat. If the crop is barley, the ant goes to another ear and sniffs it, and if it smells wheat, it climbs to the top of the ear and carries off the grain to its nest. For barley is food for beasts.”¹⁰⁴ In this description, barley represents heresy, “for heresy is like barley, and should be cast away, because it shatters and destroys men’s souls. Therefore, Christian, flee from all heretics; their teachings are false and hostile to the truth.”¹⁰⁵ In the Aberdeen Bestiary, unlike in the *Physiologus*, this allegory is followed by a rather lengthy comparison between ants and people,

¹⁰² Pliny the Elder, *Naturalis Historia*, 11.36; Pliny, *Natural History*, trans. H. Rackham, 499-501.

¹⁰³ Aelian, *De Natura Animalium*, 2.25; Aelian, *On Animals*, trans. A. F. Scholfield, 125.

¹⁰⁴ AUL, MS 24, fol. 24v; The *Physiologus* describes how “before climbing up the ears, the ant catches their scent from beneath and perceives from the scent whether it is wheat or barley. If it is barley, he immediately rushes off to the ear of wheat since barley is the food of brutes.” *Physiologus*, 14; *Physiologus*, trans. Michael J. Curley, 22.

¹⁰⁵ AUL, MS 24, fols. 24v-25r; This characteristic is similarly describe in the *Physiologus*. Cf. *Physiologus*, 14; *Physiologus*, trans. Michael J. Curley, 22-3

describing how ants do not have the same knowledge as people and yet they do not starve, nor worry about theft, and have learned to predict the weather.¹⁰⁶ However, instead of including this comparison between ants and people, the B version of the *Physiologus*, some Latin bestiaries, and the *Bestiaire* by Philippe de Thaon also list the heretics one should avoid.¹⁰⁷ The only similarity I have found between the description of this characteristic and a reference in a classical source is from Aelian's *De Natura Animalium*, where he mentions ants collecting a specific type of grain within his description of the first characteristic of ants: "Then they pick out some of the barley and the wheat and all follow the same track."¹⁰⁸ However, Aelian's description is different from the description of this characteristic in the *Physiologus* as Aelian does not mention that ants distinguish between grains of wheat and grains of barley, and only take grains of wheat.

Unlike the first characteristic of ants, the second and third characteristics of ants are not referenced by classical authors for allegorical comparisons. However, some authors reference ants' collecting and storing grains in comparison to wealth. Cicero and Valerius Maximus both tell the story of how ants predicted the wealth of King Midas. Cicero briefly describes the story in *De Divinatione*, written in the first century B.C.E, explaining "when Midas, the famous king of Phrygia, was a child, ants filled his mouth with grains of wheat as he slept. It was predicted that he would be a very wealthy man; and so it turned out."¹⁰⁹ Valerius Maximus depicts the same legend in *Factorum ac Dictorum Memorabilium*, a first century C.E. book of historical anecdotes, where he also describes ants putting grains of wheat into King Midas' mouth:

Phrygia was under the rule of Midas. When he was a boy, ants put grains of wheat into his mouth as he slept. When his parents enquired to what the prodigy tended, the Augurs responded that he would be the richest of all mankind. Nor did their prophecy prove idle, for Midas excelled the wealth of almost all kings

¹⁰⁶ AUL, MS 24, fol. 25r.

¹⁰⁷ McCulloch, *Mediaeval Bestiaries*, 82.

¹⁰⁸ Aelian, *De Natura Animalium*, 2.25; Aelian, *On Animals*, trans. A. F. Scholfield, 125.

¹⁰⁹ Cicero, *De Divinatione*, 1.36; Cicero, *On Old Age. On Friendship. On Divination*, trans. W. A. Falconer, Loeb Classical Library 154, (Cambridge, MA: Harvard University Press, 1923), 309.

in the abundance of his money and balanced the cradle of his infancy, dowered by the cheap gift of the gods, with treasuries laden with gold and silver.¹¹⁰

In this legend of King Midas, the ants are prophetic for the wealth he would have in the future. Both Cicero and Valerius Maximus mention specifically that the grains that the ants put in King Midas' mouth were grains of wheat (*grana tritici*) as opposed to grains of barley or just grains, which may suggest that, like how the *Physiologus* emphasized the allegorical importance of wheat over barley, grains of wheat had specific meaning in this legend as well.

Some classical authors also referenced ants and their allegory for wealth in comparison to human behavior, as had been done with the first characteristic of ants. These references appear in poetry, in the works of Virgil, Horace, Ovid, and Juvenal, where the idea of ants as wealthy animals is used to emphasize negative qualities in humanity. Virgil makes a reference to ants in this way in the *Georgics*, a first-century B.C.E. poem on the methods of agricultural life, where he describes how a person should prepare a threshing floor, in the same way ants gather food for the winter as “the ant [is] fearful of a destitute old age.”¹¹¹ In *Satire 1*, Horace also uses the ant's storing of food as an allegory of wealth, though in this case he compares the wealth of the ant, which is required for its survival, to the wealth that farmers, soldiers, and sailors want to acquire but is not required for their survival:

Even as the tiny, hard-working ant (for she is their model) drags all she can with her mouth, and adds it to the heap she is building, because she is not unaware and not heedless of the morrow. Yet she, soon as Aquarius saddens the upturned year, stirs out no more but uses the store she gathered beforehand, wise creature that she is; while as for you, neither burning heat, nor winter, fire, sea, sword, can turn you aside from gain—nothing stops you, until no second man be richer than yourself.¹¹²

¹¹⁰ Valerius Maximus, *Factorum ac Dictorum Memorabilium*, 1.6; Valerius Maximus, *Memorable Doings and Sayings, Volume I: Books 1-5.*, ed. and trans. D. R. Shackleton Bailey, Loeb Classical Library 492, (Cambridge, MA: Harvard University Press, 2000), 79-81.

¹¹¹ Virgil, *Georgics*, 1.186; Virgil, *Eclogues. Georgics. Aeneid: Books 1-6*, trans. H. Rushton Fairclough, revised by G. P. Goold, Loeb Classical Library 63, (Cambridge, MA: Harvard University Press, 1916), 111.

¹¹² Horace, *Satires*, 1.1.27-40; Horace, *Satires. Epistles. The Art of Poetry*, trans. H. Rushton Fairclough, Loeb Classical Library 194, (Cambridge, MA: Harvard University Press, 1926), 7.

Horace illustrates how wise the ant is for gathering food before winter comes as, even though the ant has a wealth of grain, it is needed to last the whole winter, whereas the farmers, soldiers, and sailors only want to collect wealth to be richer than everyone else. Here, Horace illustrates the difference between good wealth and bad wealth. Similarly, in *Tristia*, Ovid compares the behaviors of ants and of people looking for wealth: “Ants seek a granary, but an empty one never: no friend will approach when wealth is lost.”¹¹³ In seeming opposition to Horace’s analogy, Ovid equates ants searching for grain to people searching for wealthy friends. Finally, Juvenal, in *Satire 6*, compares ants’ wealth of grain to human behavior, specifically between the differences between men and women: “many women are short of money, but none feels any of the shame of poverty or matches herself to its limits. Their husbands occasionally look to the future, and some of them conceive a terror of cold and hunger, learning the lesson of the ant at long last. But a spend-spend-spend woman has no awareness of her failing resources.”¹¹⁴ In this case, Juvenal describes how men eventually understand why ants collect so much grain before the winter when their wives use up all of their resources. Each of these poets use the ants’ characteristic of gathering and storing grain for the winter to emphasize a negative aspect of humanity and uses the ant as a model of good behavior.

Moralizing tales of ants also appear in Phaedrus’ and Avianus’ versions of Aesop’s *Fables*, where the characteristics of ants are again used to model good behavior. Phaedrus’ first-century C.E. version of Aesop’s *Fables* includes the fable of ‘The Ant and the Fly,’ which warns the reader of doing things that do not provide wealth or resources. In the fable, an ant and a fly are arguing over who is more important. The fly’s argument is that it can get the best parts of anything, be that eating the sacrifices made to the gods or sitting on the head of a king,

¹¹³ Ovid, *Tristia*, 1.9.9-10; Ovid, *Tristia. Ex Ponto*, trans. A. L. Wheeler, revised by G. P. Goold, Loeb Classical Library 151, (Cambridge, MA: Harvard University Press, 1924), 45.

¹¹⁴ Juvenal, *Satire 6*, 355-62; Juvenal, Persius, *Juvenal and Persius*, ed. and trans. Susanna Morton Braund, Loeb Classical Library 91, (Cambridge, MA: Harvard University Press, 2004), 271.

to which the ant responds “when I am busy storing up kernels of grain for the winter I see you along the walls feeding on dung; and when the cold causes you to shrivel up and die, my well-stored house gives me safe shelter.”¹¹⁵ The fable ends with a description of the moral it is illustrating, explaining how it “distinguishes two brands of men, those who decorate themselves with illusory honours and those whose quality displays the charm of genuine worth.”¹¹⁶ Avianus’ early fifth-century version of Aesop’s *Fables* contains a similar fable to that of Phaedrus’ ‘The Ant and the Fly,’ entitled ‘The Ant and the Grasshopper.’ ‘The Ant and the Grasshopper’ has a similar moral in comparison to ‘The Ant and the Fly,’ as it also describes the ant’s laborious efforts in collecting food for the winter and the grasshoppers lack thereof. In the fable, the grasshopper begs the ant for food, to which the ant responds: “Since my subsistence has been secured by dint of hardest toil, I draw out long days of ease in the midst of the frost. But you now have your last days left for dancing, since your past life was spent in song.”¹¹⁷ This fable also defines the moral it represents: “The man that has allowed his youth to go by in idleness and has not taken anxious precautions against the ills of life—that man, foredone with years, will in the presence of burdensome old age often ask in vain, alas, for a neighbour’s help.”¹¹⁸ Both versions of the fable that includes the ant emphasize that the ant’s behavior is a representation of how people should behave; in other words, it is better to work and prepare for the future than to do what you want and find yourself without enough resources to survive. Both of these fables use the ant’s behavior as an exemplar of good behavior, like that of medieval bestiaries and the other classical sources presented in this subchapter. These fables incorporate part of the second characteristic of ants – gathering food for the winter.

¹¹⁵ Phaedrus, *Fables*, 4.25; Phaedrus, *Fables*, trans. Ben Edwin Perry, Loeb Classical Library 436, (Cambridge, MA: Harvard University Press, 1965), 341-2.

¹¹⁶ Phaedrus, *Fables*, 4.25; Phaedrus, *Fables*, trans. Ben Edwin Perry, 341-2.

¹¹⁷ Avianus, *Fables*, 34; Avianus, *Fables*, in *Minor Latin Poets, Volume II: Florus. Hadrian. Nemesianus. Reposianus. Tiberianus. Dicta Catonis. Phoenix. Avianus. Rutilius Namatianus. Others*, trans. J. Wight Duff, Arnold M. Duff, Loeb Classical Library 434, (Cambridge, MA: Harvard University Press, 1934), 735.

¹¹⁸ Avianus, *Fables*, 34; Avianus, *Fables*, trans. J. Wight Duff, Arnold M. Duff, 735.

References to the behavior and characteristics of ants appear in various classical sources, showing that not only were these behaviors and characteristics well known, but that the behavior of ants stood for exemplar for humanity. These examples are undoubtedly not the only examples of the use of ants as idealized figures in classical sources, but they provide a good basis for understanding how classical authors thought of ants, and a good comparison for how ant-lions and gold-digging ants were collectively understood by classical authors. The intertextuality between the Aberdeen Bestiary and the various classical sources above shows that the authors of medieval bestiaries understood the theological and moral interpretation of ants in the same way as these classical authors.

1.2 *Formicaleon* – The Ant-Lion

The treatment of the ant-lion in classical and medieval sources differs from the treatment of the ant. Apart from the *Physiologus*' description of the hybrid nature of the ant-lion, references to this insect are mostly consistent, describing a carnivorous ant that consumes other ants. Unlike the ant, the allegory of the ant-lion attributed to it in the *Physiologus* does not appear in other sources, though commentaries on the book of Job, where the ant-lion is briefly mentioned in some versions, such as those of St. Gregory and St. Augustine, discuss the ant-lion as a representation of Satan. When mentioned in bestiaries, the *Physiologus*' description and allegory do not appear as one would expect, but rather follow the description provided by St. Gregory and later that of Isidore of Seville. The difference in descriptions between the *Physiologus* and other sources are most likely the result of the understanding of two separate animals that were only linked by name, one of which that was fictitious.¹¹⁹ However, the classical notion of the animal called the ant-lion, referred to as either the *myrmeoleon* or the *formicoleon*, no matter what animal it is supposed to be, is necessary for

¹¹⁹ Mia I. Gerhardt, "The Ant-Lion," 8-9.

understanding the inclusion of the ant-lion in medieval bestiaries, and its inclusion in the chapter on ants specifically.

In the *Physiologus*, the ant-lion is given its own chapter. Though brief, this chapter follows the standard format of the chapters of the *Physiologus* – that of a quote from the bible, followed by the characteristic(s) of the animal, and the corresponding allegory of the characteristic(s) – as it begins with a quote from Job 4:11, then describes the dual natures of the ant-lion, which is then followed by the allegory that is represented by these dual natures. The *Physiologus* describes the ant-lion as an animal that cannot survive because of its two natures: “His father has the face of a lion and eats flesh, while his mother has the face of an ant and feeds on plants. If she brings forth an ant-lion, it perishes because it has two natures, the face of a lion and the fore and rear parts of an ant. Because of the mother’s nature, it cannot feed on flesh nor can it eat plants because of the father’s nature. It perishes, therefore, because it has no food.”¹²⁰ The ant-lion allegorizes the inability to follow two paths, i.e. serving both God and Satan,¹²¹ as a person following two paths is deceitful and confused in everything they do.¹²² Unlike that of the ant, the ant-lion’s characteristic shows how a person should not behave rather than acting as an exemplar for how a person should behave.

The ant-lion appears in significantly fewer classical sources than the ant. In the examples I have found, the ant-lion is not described as an animal with the face of a lion and the body of an ant, but rather as an ant that eats other ants. In a similar and more or less contemporary source to the *Physiologus* – the *Cyranides*¹²³ – seven types of ants are described,

¹²⁰ *Physiologus*, 34; *Physiologus*, trans. Michael J. Curley, 49.

¹²¹ Gerhardt, “The Ant-Lion,” 5.

¹²² *Physiologus*, 34; *Physiologus*, trans. Michael J. Curley, 49.

¹²³ The compilers of the *Canon of Greek Authors and Works* date the *Cyranides* to the first or second century C.E., while Klaus Alpers argues for it being a fourth century creation. See L. Berkowitz and K. A. Squitier, *Thesaurus Linguae Graecae: Canon of Greek Authors and Works*, 2nd ed. (New York, 1986), 93; George Panayiotou, “Paralipomena Lexicographica Cyranidea,” *Illinois Classical Studies* 15, No. 2 (1990): 295; Klaus Alpers, “Untersuchungen zum griechischen Physiologus und den Kyraniden,” *Vestigia Bibliae (Jahrbuch des deutschen*

including the ant-lion which is “larger (than the others) and spotted, (with wings); these are carnivorous, (but) they do not live long.”¹²⁴ Though being roughly contemporary to the *Physiologus*, the *Cyranides* makes no mention of a type of ant with the head of a lion that is also referred to as an ant-lion, suggesting that there were at least two separate ideas of what characteristics ant-lions had, and even that the authors of these works may have been writing about two separate animals.¹²⁵

Stepping away from pseudo-scientific texts on natural history briefly, Christian sources also mention the ant-lion, specifically the book of Job as well as commentaries on the book of Job. As mentioned earlier, the *Physiologus* begins the chapter on the ant-lion with a quote from Job 4:11: “In Job, Eliphaz King of the Temanites says of the ant-lion, ‘He perished because he had no food.’”¹²⁶ The *Physiologus* uses this passage to describe how the ant-lion cannot survive because it cannot feed both natures, however St. Gregory and St. Augustine interpret this passage, and the animal mentioned in it, differently in their respective commentaries *Moralia sive Expositio in Job* and *Annotaciones in Job*. Both believe that the ant-lion represents Satan who perishes because he cannot find enough sinners to worship him, though St. Gregory is the only one of the two to describe the ant-lion, which “is a very small animal, a foe to ants, which hides in the dust and kills the grain-bearing ants and devours them.”¹²⁷ St. Gregory also offers an etymology for the animal describing it as both “a lion to ants,” and “at the same time an ant

Bibel-Archiv, Hamburg 6 (1984), 13-84; Barry Baldwin, “‘Cyranidea’: Some Improvements,” *Illinois Classical Studies* 17, No. 1 (1992), 103.

¹²⁴ *Cyranides*, Book 2, quoted in Mia Gerhardt, “The Ant Lion. Nature Study and Interpretation of a Biblical Text, from the ‘Physiologus’ to Albert the Great,” *Vivarium* 3 (1965): 8. This translation is a collated translation of two Greek versions of the *Cyranides* and a Latin version of the first paragraph of the chapter on ants in Book Two done by Gerhardt. I could not find a transcription of translation of Book 2 of the *Cyranides*. Interestingly, the list of the seven kinds of ants does not include gold-digging ants.

¹²⁵ Gerhardt, “The Ant-Lion,” 8-9. Gerhardt delves deeper into the argument of the *Physiologus* and the *Cyranides* writing about two different animals for their sections on ant-lions.

¹²⁶ *Physiologus*, 34, *Physiologus*, trans. Michael J. Curley, 49.

¹²⁷ St. Gregory, *Moralia sive Expositio in Job*, 5.40, trans. Mia Gerhardt, in “The Ant Lion. Nature Study and Interpretation of a Biblical Text, from the ‘Physiologus’ to Albert the Great,” Mia Gerhardt, *Vivarium* 3 (1965): 13.

and a lion,”¹²⁸ emphasizing the ant-lion’s carnivorous nature. Though St. Augustine does not describe the ant-lion in his commentary, it is clear that he understood what the ant-lion was when he describes how the ant-lion is representative of Satan:

But he is to be known as the ant-lion, because both of these animals are in him, like (the ant) both carries off and secretly seeks out grains, which it makes not germinate since the eye of the grain has been removed, either because (Satan) reigns over the covetous people hoarding treasure on earth or because he pursues righteous people, like ants preparing food for themselves from the summer until the winter, for which people he does not nourish, because the good ones were separated from the bad.¹²⁹

This passage shows that St. Augustine understood that the ant-lion has characteristics from both animals as he describes how these characteristics can also be seen in Satan. He describes the second nature of ants, where they gather grain for winter provisions and separate the grain in two so that it does not germinate if it gets wet, and compares this to how Satan tries to gather up righteous people, separating them from those who are sinners so they do not cause the sinners to grow and repent. The characteristic of the lion, or rather the lion part of the ant-lion, is represented by Satan ruling over the people who covet wealth, metaphorically comparing them to ants that hoard wealth. St. Gregory provides an analogy of the ant-lion and Satan where the ant-lion’s “treacherous slaying of the grain-bearing ants” is similar to how Satan “slays” the righteous ones “who are laying up spiritual provision through good works.”¹³⁰ Though this analogy is not the same as the one provided in the *Physiologus*, there was an parallel understanding in these sources that the ant-lion’s characteristics correspond to bad behavior.

¹²⁸ St. Gregory, *Moralia sive Expositio in Job*, 5.40, in Gerhardt, “The Ant-Lion,” 13.

¹²⁹ My translation of *Myrmicoleon vero accipiendus est vel quia utrumque in eo est, cum et rapit et occulte persequitur frumenta, quae sublato oculo facit non germinare, vel quia avaris et in terra thesaurizantibus dominatur, vel quia iustos persequitur quasi formicas praeparantes sibi escas aestate ad hiemem, quibus non pascetur, cum boni ab impiis fuerint separati*. St. Augustine, *Annotaciones in Job*, 4.11, quoted Mia Gerhardt, “The Ant Lion. Nature Study and Interpretation of a Biblical Text, from the ‘Physiologus’ to Albert the Great,” trans. Mia Gerhardt, *Vivarium* 3 (1965): 14.

¹³⁰ Gerhardt, “The Ant-Lion,” 15. This is Gerhardt’s interpretation of St. Gregory, *Moralia sive Expositio in Job*, 5.43.

These analogies given for the ant-lion do not appear in the later sources that describe these animals, though St. Gregory's description of these animals does. Isidore of Seville describes ant-lions in his *Etymologiae* where he includes both an account of the animal and an etymology of its name: "The 'ant lion' (*formicoleon*) is so called either because it is the lion (*leo*) of ants or, more likely, because it is equally an ant and a lion, for it is a small animal very dangerous to ants because it hides itself in the dust and kills the ants carrying grain. And thus it is called both and 'ant' and a 'lion,' because to the rest of the animals it is like an ant, but to ants it is like a lion."¹³¹ This description is identical to St. Gregory's in his *Moralia sive Expositio in Job*. It also appears in a similar way in medieval bestiaries when the ant-lion is mentioned. In Corpus Christi College, MS 22, for example, the ant-lion is described: "There is another ant that is called a lion, because it is equally an ant and a lion. Also in this way it is named that because to other animals it is like an ant, but for ants it kills them like a lion."¹³² Rather than including a chapter on ant-lions, bestiaries included this brief description of ant-lions in the chapter on ants, taking this information from Isidore of Seville as rather than from the *Physiologus*.

One other source the ant-lion is mentioned in is Aldhelm of Malmesbury's *Aenigmata*, a collection of a hundred riddles. Aldhelm's riddle on the ant-lion reads: "My name's a hybrid since antiquity. / I'm called a "lion," then an "ant" in Greek, / a blended metaphor, a sign that's bleak; / I can't defend birds' beaks with my own beak. / May scholars probe my name's duplicity!"¹³³ Here Aldhelm plays on the dual nature of the ant-lion with the name of both 'ant' and 'lion.' Aldhelm was the abbot of Malmesbury in the seventh century, and though from

¹³¹ Isidore of Seville, *Etymologiae*, 12.3.10; Isidore of Seville, *The Etymologies of Isidore of Seville*, trans. Stephen A. Barney, W. J. Lewis, J. A. Beach, and Oliver Berghof. (Cambridge: Cambridge University Press, 2006), 255.

¹³² Cambridge, Corpus Christi College, MS 22, f. 167v. My translation of *est aliud quod formica leo dicitur quod est pariter formica et leo. Ita quoque uocatur eo quod aliis animalibus ut formica est, formicis autem ut leo qui eas interficit.*

¹³³ St. Aldhelm of Malmesbury, *Aenigmata*, 18; St. Aldhelm of Malmesbury, *Saint Aldhelm's Riddles*, trans. A. M. Juster. (Toronto: University of Toronto Press, 2015), 11.

Wessex, he studied Latin and Greek texts in Canterbury,¹³⁴ and thus, he was most likely aware of St. Gregory's and St. Augustine's commentaries on the book of Job and their understanding of the ant-lion. Aldhelm's reference to "a blended metaphor, a sign that's bleak" could, therefore, be referring to St. Augustine's and St. Gregory's comparison of the ant-lion and Satan.

The ant-lion's popularity in classical texts is relatively non-existent compared to the numerous mentions of ants in the same or similar sources. However, despite the smaller collection of sources that describe the ant-lion and its allegory, it is obvious that there was a collective understanding of what this animal was and how it behaved. The *Physiologus*' description of this animal is an outlier, compared to the other sources that describe this animal, including that of medieval bestiaries. However, each source presented in this section mentions the duality of the ant-lion in some way, showing that this was the most important aspect in the understanding of the ant-lion and in its use in bestiaries that centered on the moral interpretations of the behavior of animals.

1.3 The Gold-Digging Ant

The intertextuality between classical and medieval sources for gold-digging ants is more straightforward than it is for ants or ant-lions. Ants, as mentioned earlier, rely on the religious exemplar of ant's behavior for their use in sources, and ant-lions represent bad behavior, being used in the same way as ants but for a negative trait. Sources that mention gold-digging ants, on the other hand, present these creatures with a story of how they behave, but the story is not moralized. The gold-digging ant is one of the three types of ants mentioned in medieval bestiaries that are not mentioned in the *Physiologus*, and thus its explanation for being

¹³⁴ Britannica, T. Editors of Encyclopaedia, "Aldhelm," *Encyclopedia Britannica*, June 18, 2013, <https://www.britannica.com/biography/Aldhelm>.

there is solely that it was taken from Isidore of Seville and other sources that mention gold-digging ants. Though, again, the classical sources that mention gold-digging ants are not as extensive as those for ants, as the majority of these sources fall into the genre of geographical description, which is how they are used, in turn, in most medieval sources. The stories of gold-digging ants are told to explain the area they are supposed to be from, either India or Ethiopia depending on the source, and are, therefore, used to understand the zoology of that region. The stories of gold-digging ants told by classical and medieval authors contain mostly the same information, but the physical qualities of these ants are slightly different. Their large size is often stated, but some authors describe a more insect-like body, and others describe a more dog-like body, as will be seen below. Their appearance in medieval bestiaries is unlike that of other texts related to geography, but it suggests that the connection to ants was significant enough to have them included within a text on natural history and theology. Furthermore, the story of gold-digging ants emphasize their violence, a trait that is also used as a negative quality in bestiaries in contrast to that of the ant.

One of the earliest written sources gold-digging ants appear in is Herodotus' *Histories* from the fifth century B.C.E. The creatures themselves are described as "ants not so big as dogs but bigger than foxes" that "make their dwellings underground, digging out the sand in the same manner as do the ants in Greece, to which they are very like in shape, and the sand which they carry forth from the holes is full of gold."¹³⁵ Herodotus goes on to describe how these ants live and dig up gold in a desert in India, and the people there will take three camels each into the desert, a male, a female, and a young camel, tie up the young camel and take the other two with them to get the gold.¹³⁶ Then the people would "come to the place with their sacks, they fill these with the sand and ride away back with all speed; for, as the Persians say, the ants

¹³⁵ Herodotus, *Histories*, 3.102; Herodotus, *The Persian Wars, Volume II: Books 3-4*, trans. A. D. Godley, Loeb Classical Library 118, (Cambridge, MA: Harvard University Press, 1921), 129-33.

¹³⁶ Herodotus, *Histories*, 3.102-5; Herodotus, *The Persian Wars*, trans. A. D. Godley, 129-33.

forthwith scent them out and give chase, being, it would seem, so much swifter than all other creatures that if the Indians made not haste on their way while the ants are mustering, not one of them would escape.”¹³⁷ They would leave the male camel behind for the ants to attack, while escaping on the female camel that would be faster because of her kid that was left behind.¹³⁸ This lengthy story told by Herodotus is the basis of all other stories of gold-digging ants. Depending on the source, there are some differences in details in the story, but generally the story contains the same information, albeit often in a smaller fashion.

Strabo also mentions gold-digging ants in *Graphica*, describing what the previous writers Nearchus and Megasthenes had said about these creatures. According to Strabo, Nearchus had described these ants as having skins “like those of leopards.”¹³⁹ Megasthenes, again according to Strabo, in a similar story to that of Herodotus describes ants that live in gold-mines in India “animals that are no smaller than foxes, are surpassingly swift, and live on the prey they catch. They dig holes in winter and heap up the earth at the mouths of the holes, like moles; and the gold-dust requires but little smelting.”¹⁴⁰ Strabo goes on to relate how people would come on camels and take their gold, though instead of leaving a camel behind “to escape being seen by the ants, the people lay out pieces of flesh of wild beasts at different places, and when the ants are drawn away from around the holes, the people take up the gold-dust.”¹⁴¹ Both Nearchus and Megasthenes describe these creatures in relation to quadrupeds, emphasizing their beast-like nature.

¹³⁷ Herodotus, *Histories*, 3.102-5; Herodotus, *The Persian Wars*, trans. A. D. Godley, 129-33.

¹³⁸ Herodotus, *Histories*, 3.105; Herodotus, *The Persian Wars*, trans. A. D. Godley, 129-33.

¹³⁹ Strabo, *Graphica*, 15.1.44; Strabo, *Geography, Volume VII: Books 15-16*, trans. Horace Leonard Jones, Loeb Classical Library 241, (Cambridge, MA: Harvard University Press, 1930), 75-7.

¹⁴⁰ Strabo, *Graphica*, 15.1.44; Strabo, *Geography*, trans. Horace Leonard Jones, 75-7.

¹⁴¹ Strabo, *Graphica*, 15.1.44; Strabo, *Geography*, trans. Horace Leonard Jones, 75-7.

Pliny describes gold-digging ants in a slightly different way than that of Herodotus and Strabo, though the violent nature of gold-digging ants is still emphasized. He describes these creatures that live in India as:

The creatures are of the colour of cats and the size of Egyptian wolves. The gold that they dig up in winter time the Indians steal in the hot weather of summer, when the heat makes the ants hide in burrows; but nevertheless they are attracted by their scent and fly out and sting them repeatedly although retreating on very fast camels: such speed and such ferocity do these creatures combine with their love of gold.¹⁴²

Though flying ants are referred to in other sources,¹⁴³ gold-digging ants are rarely described as flying creatures and even less as creatures who “sting.” However, Pliny’s story is similar to Megasthenes’ description of the same story and Pliny, in the same way, describes gold-digging ants as the color of cats and the size of an Egyptian wolf.¹⁴⁴ The only thing that Pliny obviously added was the opening description of their size¹⁴⁵: “The horns of an Indian ant fixed up in the Temple of Hercules were one of the sights of Erythrae.”¹⁴⁶ Nevertheless, the size of gold-digging ants was an important detail to Pliny.

Dio Chrysostom provides a different description in his *Oratio* 35 than Pliny and Strabo. He does mention that gold-digging ants are from India and that people obtain gold from these creatures, but he describes them more like large insects: “These ants are larger than foxes, though in other respects similar to the ants we have. And they burrow in the earth, just as do all other ants. And that which is thrown out by their burrowing is gold, the purest of all gold and the most resplendent.”¹⁴⁷ Dio Chrysostom also describes the violent nature of these ants, though not as flying creatures who sting, but as creatures who will fight to the death for gold: “And the ants, becoming aware of what has happened, give chase, and, having overtaken their

¹⁴² Pliny, *Naturalis Historia*, 11.36; Pliny, *Natural History*, trans. H. Rackham, 501.

¹⁴³ Like the description of the ant-lion given in the *Cyranides*, Book 2, as mentioned in the previous section.

¹⁴⁴ Druce, “An Account of the Murmekoleon or Ant-Lion,” 335.

¹⁴⁵ Druce, “An Account of the Murmekoleon or Ant-Lion,” 335.

¹⁴⁶ Pliny, *Naturalis Historia*, 11.36; Pliny, *Natural History*, trans. H. Rackham, 501.

¹⁴⁷ Dio Chrysostom, *Oratio*, 35.23-4; Dio Chrysostom, *Discourses* 31-36, trans. J. W. Cohoon, H. Lamar Crosby, Loeb Classical Library 358, (Cambridge, MA: Harvard University Press, 1940), 413-5.

quarry, fight until they either meet their death or kill the foe—for they are the most valiant of all creatures. And so these at any rate know what their gold is worth, and they even die sooner than give it up.”¹⁴⁸ Though he considers them ants, Dio Chrysostom emphasizes gold-digging ants’ bestial nature rather than actual characteristics of ants.

In their stories of gold-digging ants, Solinus and Aelian add details that were not a part of the descriptions given in the sources above. The description of gold-digging ants given by Solinus in his *Polyhistor* is similar to other descriptions of gold-digging ants: “The ants here are shaped like huge dogs, and dig up the golden sand with their feet, which are like lions’. They guard it lest someone steal it, enticing and pursuing them to the death.”¹⁴⁹ However, there are two differences in his description in comparison to the descriptions that have already been looked at. The first is that he places these creatures in Ethiopia rather than in India.¹⁵⁰ The second is that he described gold-digging ants as having feet like lions. Perhaps Solinus was emphasizing the quadrupedal body of these ants, though this description also calls to mind the *Physiologus*’ description of the ant-lion that has the face of a lion and the body of an ant. Aelian, however, does place gold-digging ants in India, but, unlike that of any of the descriptions seen up to now, only briefly describes them in *De Natura Animalium*. His short description reads: “The Ants of India which guard the gold will not cross the river Campylinus.”¹⁵¹ This is one of the first mentions of gold-digging ants not crossing a river. This detail will appear again in later stories on the gold-digging ant, especially in the *Wonders of the East*, where the ants will not pursue people across a river to retrieve their gold.

¹⁴⁸ Dio Chrysostom, *Oratio*, 35.23-4; Dio Chrysostom, *Discourses 31-36*, trans. J. W. Cohoon, H. Lamar Crosby, 413-5.

¹⁴⁹ Solinus, *The Polyhistor*, 30.23; Gaius Iulius Solinus, *The Polyhistor*, trans. Arwen Apps, “Gaius Iulius Solinus and his Polyhistor,” (PhD diss., Macquarie University, 2011), quoted on “Solinus, Polyhistor,” *Topostext*, accessed May 12, 2022, <https://topostext.org/work/747#30.23>.

¹⁵⁰ Solinus, *The Polyhistor*, 30.23; Gaius Iulius Solinus, *The Polyhistor*, trans. Arwen Apps; Druce, “An Account of the Murmekoleon or Ant-Lion,” 356.

¹⁵¹ Aelian, *De Natura Animalium*, 3.4; Aelian, *On Animals*, trans. A. F. Scholfield, 163.

Though gold-digging ants are not described in the *Physiologus*, they are described in one of the other influential texts that medieval bestiaries took information from: Isidore of Seville's *Etymologiae*. Isidore also briefly describes these creatures: "It is said that in Ethiopia there are ants in the shape of dogs, who dig up golden sand with their feet - they guard this sand lest anyone carry it off, and when they chase something they pursue it to death."¹⁵² Here, he mentions the two main characteristics of gold-digging ants that every author who describes these creatures agree on: their dog-like quality and their violent nature.

These slight inconsistencies in the various classical retelling of the story of gold-digging ants – that of where they are from, their physical description, and the details on their behavior – become more pronounced in medieval versions of this story. Though many of the descriptions above place gold-digging ants in a desert, medieval works such as the *Wonders of the East* and Gervase of Tilbury's *Otia Imperialia* include Aelian's reference to the river Campylinus at the beginning of their story. The *Wonders of the East* writes: "The river is named Capi in the same place, which is called Gorgoneus, that is 'valkyrie-like'. Ants are born there as big as dogs, which have feet like grasshoppers, and are of red and black colour."¹⁵³ Similarly, Gervase of Tilbury places these ants near a river in his version of the story, though it is unclear if it is the same river as the Campylinus: "On the same island is the river Gargarum, beyond which are found giant ants as big as puppies, each with six feet, and a body like a lobster's; they have dogs' fangs, and are black in colour."¹⁵⁴ The river is mentioned again in both sources when the process of how people get the gold is explained. The *Wonders of the East* describes: "People who are bold enough to take the gold bring with them male camels and females with

¹⁵² Isidore of Seville, *Etymologiae*, 12.3.9; Isidore of Seville, *The Etymologies of Isidore of Seville*, trans. Stephen A. Barney, et. al., 255.

¹⁵³ British Library, Cotton MS Tiberius B V/1, fol. 80v, http://www.bl.uk/manuscripts/Viewer.aspx?ref=cotton_ms_tiberius_b_v!1_f002r; *Wonders of the East*, in *Pride and Prodigies: Studies in the Monsters of the Beowulf-Manuscript*, trans. Andy Orchard (Cambridge: D. S. Brewer, 1995), 191, § 9.

¹⁵⁴ Gervase of Tilbury, *Otia Imperialia*, 3.73; Gervase of Tilbury, *Otia Imperialia: Recreation for an Emperor*, trans. S. E. Banks and J. W. Binns, Oxford Medieval Texts. (Oxford: Clarendon Press, 2002), 698-9.

their young. They tie up the young before they cross the river. They load the gold onto the females, and mount them themselves, and leave the males there.”¹⁵⁵ Similarly, Gervase of Tilbury wrote:

For people take as many camels as possible, together with their mates and their young, and when they reach the bank of the river that has to be crossed, they tie the baby camels to clumps of bushes on the bank. They then cross the river with the camels of both sexes, and load the gold onto the female ones. These, loaded down, but enticed by the love of their young, make rapid headway in crossing the water. Then then men, as soon as they perceive columns of ants coming after them, leave the male camels by the river as an easy prey to be devoured, and hastily cross to the other side of the water.¹⁵⁶

The use of camels in this way is a main part of this story of gold-digging ants as it was even included in Herodotus’ version of the story.¹⁵⁷ It is the inclusion of the river and leaving the baby camels on one side of the river that is a medieval addition to this story.

Furthermore, despite the completely different description of gold-digging ants, both the *Wonders of the East* and *Otia Imperialia* describe how after stealing gold, people would distract the ants with camels and escape across the river: “Then the ants detect the males, and while the ants are occupied with the males, the men cross over the river with the females and the gold.”¹⁵⁸, and “And in fact the ants, cheated as they have been by the robbers’ looting, are hindered by their consumption of the camels left in their way, and impeded by the obstacle of the river, so that all they can do is devour the camels which they find.”¹⁵⁹ Both descriptions emphasize the violent, bestial nature of gold-digging ants, though they also reference the ants’ inability to cross rivers.

¹⁵⁵ British Library, Cotton MS Tiberius B V/1; *Wonders of the East*, trans. Andy Orchard, 191, § 9.

¹⁵⁶ Gervase of Tilbury, *Otia Imperialia*, 3.73; Gervase of Tilbury, *Otia Imperialia*: trans. S. E. Banks and J. W. Binns, 698-9.

¹⁵⁷ Herodotus, *Histories*, 3.102-5; Herodotus, *The Persian Wars*, trans. A. D. Godley, 129-33.

¹⁵⁸ British Library, Cotton MS Tiberius B V/1; *Wonders of the East*, trans. Andy Orchard, 191, § 9.

¹⁵⁹ Gervase of Tilbury, *Otia Imperialia*, 3.73; Gervase of Tilbury, *Otia Imperialia*: trans. S. E. Banks and J. W. Binns, 698-9.

Medieval bestiaries that include descriptions of gold-digging ants place them in Ethiopia, unlike that of many of the classical sources that places these ants in India. The descriptions in bestiaries do describe similar characteristics of these ants that were emphasized in earlier sources. Bestiaries describe the dog-like nature of the ants, and the violence they will inflict if someone steals from them. However, there are some differences in the bestiary's version as well, as can be seen in the translation provided in Druce:

And they say that there are in Ethiopia ants as big as a dog, which dig up the sand which contains gold with their feet; and they keep guard over it that no one rob them, and if any come to rob them, they pursue them with fatal results. But those who mean to steal the gold bring mares with their young foals and starve them for three days; they then tie up the foals on the banks of the river which runs between them and the ants, and having put pack-saddles on their back drive the mares across the stream. And they graze in the fields on the further side. But when the ants see the pack-saddles and receptacles upon their back they collect the golden sand and put it in them, believing that they are hiding it there. And when the day is drawing to its close and the mares have got a good bellyful and are laden with gold, they hear their little foals whinnying through hunger, and so they hurry back to them (across the stream) with much gold.¹⁶⁰

The intertextuality between this description in Latin bestiaries and other classical and medieval versions of this story is quite apparent, from the details describing dog-like ant's that dig up and guard gold, the aggressive nature of pursuing those who take the gold and killing them, and even tying up baby camels on one side of the river so that their mothers escape quickly with the gold. However, the one main difference that does not appear in other versions of this story is that here the gold-digging ants hide their gold in the bags on the camels themselves, rather than someone taking the gold and loading it on the camel. Though this difference has little to do with the characteristics of gold-digging ants, it is quite an interesting detail that Latin bestiaries include.

One other type of medieval source that references gold-digging ants are *mappae mundi*. *Mappae mundi* are integral sources for understanding how medieval authors and artists

¹⁶⁰ Druce, "An Account of the Murmekoleon or Ant-Lion," 357-8.

perceived creatures such as gold-digging ants. Gold-digging ants appear on two *mappae mundi*, the mid-thirteenth-century Ebstorf Map and the early-fourteenth-century Hereford Map, as well as in Baudri of Bourgueil's description of a *mappa mundi* in his twelfth-century educational poem "To Countess Adela." The descriptions of gold-digging ants provided on or in relation to these *mappae mundi* do not come in the form of a story, like these descriptions in the works of natural history and geography included above, nor do they include many of the main details that are consistently found in these stories. However, even though these maps did not make use of the text of medieval bestiaries, the imagery and subject matter used on *mappae mundi* was closely tied to, and possibly even drawn from the medieval bestiary, and this would have been understood by those who viewed the map.¹⁶¹ Both the Ebstorf map and the Hereford map provide brief, one sentence descriptions of gold-digging ants, both of which are accompanied by illustrations, as will be seen in the analysis on ant iconography in the third chapter below. The description on the Ebstorf map, placed in the area of Mesopotamia, reads "*Formice canum magnitudine custodiunt aureas arenas*" or "Ants the size of dogs guard the golden sands."¹⁶² The inscription on the Hereford map, though placed in Ethiopia, reads similarly to the Ebstorf map: "*Hic grandes formice auream sericam arenas*" or "Here [are] enormous ants [and] golden silken sands."¹⁶³ Both reference the size of these ants and gold, but do not directly mention the ants digging up gold. However, because of the close relationship between bestiaries and *mappae mundi*, the reference would have been enough for the observer to recall the story of gold-digging ants.

¹⁶¹ Naomi Reed Kline, *Maps of Medieval Thought: The Hereford Paradigm* (Woodbridge: The Boydell Press, 2001), 100.

¹⁶² Ebstorf Map; my translation.

¹⁶³ Hereford Map; "Hic grandes formice (Hereford Map, Hereford Cathedral)," eds. and trans. Cat Crossley, Heather Wacha, and Martin Foys, in *Virtual Mappa*, eds. Martin Foys, Heather Wacha et al. Schoenberg Institute of Manuscript Studies, 2020: <https://sims2.digitalmappa.org/36>, DOI: 10.21231/ef21-ev82.

This connection between gold-digging ants on *mappae mundi* and their stories in other classical and medieval works is more overt in Baudri of Bourgueil's "To Countess Adela." When he comes across the area where gold-digging ants are located on the *mappa mundi* he describes, Baudri of Bourgueil relates this information: "Farther back is the desert, populated with busy / Ants of gigantic size, going about their work. / They are as big, I am told, as mice are in our regions; / According to ancient tales, gold is the burden they lug."¹⁶⁴ The last line of this quote shows that, as the viewer of this map, from the image or description of these ants on the map he was able to recall their characteristic of digging up gold.

The intertextuality between the classical and medieval stories of gold-digging ants is very consistent, as only minor details in the story changes over the approximately seventeen hundred years between Herodotus' description in his *Histories* and the description in medieval bestiaries. This shows a continuous collective understanding of the story and the characteristics of these creatures, even though classical and medieval authors could not agree on how these creatures looked. These differing descriptions of the physical qualities of gold-digging ants are reflected in the iconography of gold-digging ants, as will be seen later.

¹⁶⁴ Baudri of Bourgueil, "To Countess Adela," 915-18; Baudri of Bourgueil. "To Countess Adela," in "Baudri of Bourgueil, 'To Countess Adela,'" trans. Monika Otter, *The Journal of Medieval Latin* 11 (2001): 88.

Chapter 2 – Ants in Latin Bestiaries

Understanding the connection between ants, gold-digging ants, and ant-lions in Latin bestiaries is not possible through only an intertextual analysis. An analysis of the chapter on ants in Latin bestiaries is also required, since there are quite a few differences between different types of bestiaries despite the fact that all bestiaries were based on the same text, the *Physiologus*. Though the descriptions of the chapter on ants in McCulloch's *Mediaeval Bestiaries*, and George and Yapp's *The Naming of the Beasts*, mention the general information seen in these chapters in different versions of the bestiary, this information does not apply to every bestiary nor do they give a clear ratio of the bestiaries gold-digging ants and ant-lions were included in versus those they were not mentioned in at all. The analysis done in this chapter shows that, despite the fact that gold-digging ants and ant lions were only included in a fraction of the bestiaries used in this analysis, their descriptions intentionally juxtaposed the characteristics of ant. Furthermore, the animal chapters that precede and follow that of the ant in certain versions of bestiaries were chosen to reflect and emphasize the ideal behavior exemplified in those chapters.

In this analysis, I use forty-one Latin bestiaries produced between the tenth and the fifteenth centuries, though the majority of these bestiaries were produced in the eleventh and twelfth centuries. Also, of the bestiaries whose location of production is known, most are from England, with only a handful produced in northern Europe, specifically in France, Germany, and Austria. Twenty-eight of these Latin bestiaries are illustrated, and two other have the space for illustrations that were never completed. As outlined in the introduction, this corpus of bestiaries includes four First Family, B-Is versions, two First Family, H versions, five First Family, transitional versions, of which two are marginal bestiaries in psalters, sixteen Second Family bestiaries, one Third Family bestiary, and thirteen *DC* bestiaries.

Each chapter on ants in these bestiaries follows the same general format that was first used in the *Physiologus*. The first part of the chapter describes a behavioral or physical characteristic of the animal, which is then moralized in the second part of the chapter.¹⁶⁵ These descriptions often contain multiple biblical references, with a passage opening the chapter and other passages used as allegorical comparisons for the Christian moralization of the characteristics. It is this general format that the chapters of ants follow in Latin bestiaries, as has partially been seen in the translations of bestiary presented in the previous chapter.

The chapters on ants in these bestiaries begin in one of four ways, three of which either quote or reference another source. The first way begins with a quote from Proverbs 6:6, following the example of the chapter on ants in *Physiologus* versions Y and B.¹⁶⁶ Six bestiaries begin their chapter on ants in this way, with the opening text worded like or similar to “*Ita Salomon dicit. Vade ad formicam, o piger, et imitare vias eius.*” The six bestiaries that begin with this passage are mainly earlier versions, as three are B-Is bestiaries,¹⁶⁷ two are H bestiaries,¹⁶⁸ and one is a Second Family bestiary.¹⁶⁹ The second and most popular way the chapters on ants begin is to omit a quote or reference to another source all together and begin with the phrase “*Formica tres naturas habet.*” Sixteen bestiaries begin their chapter on ants in this way, of which one is a B-Is version,¹⁷⁰ three are Transitional versions,¹⁷¹ and the other

¹⁶⁵ Baxter, *Bestiaries and their Users*, 33.

¹⁶⁶ McCulloch, *Mediaeval Bestiaries*, 82.

¹⁶⁷ Vatican, Biblioteca Apostolica Vaticana, Pal. lat. 1074, fols. 4v-5v, https://digi.vatlib.it/view/MSS_Pal.lat.1074; London, British Library, Stowe MS 1067, fols. 9r-v, http://www.bl.uk/manuscripts/Viewer.aspx?ref=stowe_ms_1067_fs001r; Paris, Bibliothèque Nationale de France, Nouv. Acq. Lat. 873, fols. 41r-42r, <https://gallica.bnf.fr/ark:/12148/btv1b100321695/f44.item>.

¹⁶⁸ Valenciennes, Bibliothèque Municipale de Valenciennes, MS 101, fol. 197v, https://patrimoine-numerique.ville-valenciennes.fr/ark:/29755/B_596066101_MS_0101/F_171_DET_2/v0001.simple.selectedTab=otherdocs; Paris, Bibliothèque Nationale de France, Lat. 14429, fols. 115v-116r, <https://gallica.bnf.fr/ark:/12148/btv1b10033822c/f119.item.zoom#>.

¹⁶⁹ Vatican, Biblioteca Apostolica Vaticana, Reg. Lat. 258, fols. 21v-22v, https://digi.vatlib.it/view/MSS_Reg.lat.258.

¹⁷⁰ CCC, MS 22, fols. 167r-v.

¹⁷¹ New York, Pierpont Morgan Library, MS M 81, fols. 31v-33r, <https://www.themorgan.org/collection/workshop-bestiary/36>; London, British Library, Royal MS 12 C XIX, fols.

twelve are Second Family bestiaries. The third way bestiaries in this corpus begin the chapter on ants is by quoting Isidore of Seville's etymology of the name of ants: "*Formica dicta ab eo quod ferat micas farris.*"¹⁷² Four bestiaries in this corpus being in this manner, three of which are Second Family bestiaries, and the fourth is a Third Family bestiary. The final way of beginning the chapter on ants is used only by the *DC* bestiaries, of which all thirteen begin with the same line where they cite the *Physiologus*: "*De Formica dicit Physiologus quod tres naturas habeat.*"

The rest of the chapter on ants is more or less the same between the different versions of Latin bestiaries in this corpus. Following the opening expositions, most bestiaries then go on to describe the three natures of the ants and their Christian moralizations. Three Second Family bestiaries, those of BL, Royal MS 12 F XIII, Bodl., MS Bodley 764, and BL, Harley MS 4751 which began their chapters with Isidore's explanation of the etymology of the ant's name, are the only bestiaries in this corpus that do not go directly into describing the characteristics of ants. Instead, these bestiaries describe the gold-digging ant before continuing onto the three characteristics of ants.

Of the forty-one bestiaries in this corpus, gold-digging ants are mentioned in nine and ant-lions are mentioned in seven of those nine bestiaries. Even though that does not sound like many bestiaries compared to the number used in this analysis, it is actually a substantial number. As mentioned earlier, *DC* bestiaries follow the B version of the *Physiologus* more closely than other Latin bestiaries, and neither ant-lions nor gold-digging ants appear in the

24v-26r, http://www.bl.uk/manuscripts/Viewer.aspx?ref=royal_ms_12_c_xix_fs001r; Los Angeles, Getty Museum, MS 100, fol. 23r, <https://www.getty.edu/art/collection/object/109B2G>.

¹⁷² London, British Library, Royal MS 12 F XIII, fols. 45v-46v, http://www.bl.uk/manuscripts/Viewer.aspx?ref=royal_ms_12_f_xiii_fs001r; Oxford, Bodleian Library, MS Bodley 764, fols. 53v-54v, <https://digital.bodleian.ox.ac.uk/objects/e6ad6426-6ff5-4c33-a078-ca518b36ca49/surfaces/51947544-f5f1-4daa-9c64-3c02f2a803f8/>; London, British Library, Harley MS 4751, fols. 32r-33r, http://www.bl.uk/manuscripts/Viewer.aspx?ref=harley_ms_4751_fs001r; Cambridge, Cambridge University Library, MS Kk.4.25, fols. 75v-76r, <https://cudl.lib.cam.ac.uk/view/MS-KK-00004-00025/138>.

chapter on ants in the *Physiologus*. Similarly, many Second Family bestiaries are closely related copies a bestiary that does not mention ant-lions or gold-digging ants, but instead includes more discussion on the behaviors of ants, and so, out of these sixteen Second Family bestiaries, only four mention gold-digging ants, and only two of those mention ant-lions. The other bestiaries that mention all three types of ants are four B-Is versions and one H version. All four B-Is versions – Vat., Pal. lat. 1074, BL, Stowe MS 1067, BnF, Nouv. Acq. Lat. 873, and CCC, MS 22 – and the H version, BnF, Lat. 14429, follow the descriptions of the three characteristics of ants with a description of gold-digging ants and end the chapter with a description of ant-lions. Of the four Second Family bestiaries that mention gold-digging ants, three of them include the description of these ants before the three characteristics of ants, as mentioned earlier. Both Bodl., MS Bodley 764, and BL, Harley MS 4751 move directly from gold-digging ants to the characteristics of ants with no mention of ant-lions anywhere in the chapter. Though BL, Royal MS 12 F XIII is similar in construction to those two bestiaries, it describes both gold-digging ants and then ant-lions before providing a brief description of the characteristics of ants.

The final bestiary that mentions gold-digging ants and ant-lions is Biblioteca Apostolica Vaticana, Reg. Lat. 258. The chapter on ants in this bestiary is quite interesting and unusual because of its treatment of gold-digging ants specifically. Like that of the B-Is and H bestiaries that mention gold-digging ants and ant-lions, they are mentioned at the end of the chapter after the description of the three natures of the ants. However, the gold-digging ants are described as the fourth nature of the ant,¹⁷³ meaning either the person who copied this bestiary mistook the description of gold-digging ants to be fourth nature of ants, or intentionally described gold-

¹⁷³ Vat., Reg. Lat. 258, f. 22r.

digging ants in this way because of their characteristics. The illustration in this chapter is also interesting as it depicts gold-digging ants rather than the regular, innocuous ant.

From this comparison of these forty-one Latin bestiaries, despite the minimal differences in the text in the chapters on ants, I noticed the chapters of ants appeared between two specific animals in each group of bestiaries. In B-Is bestiaries, the chapter of the ant is preceded by a chapter on the hoopoe and is followed by a chapter on the siren and onocentaur. First Family, H bestiaries place the ant between a chapter on the lizard and a chapter on the asp. Transitional bestiaries have the chapter on ants between that of the weasel and that of the ibex. In most Second Family bestiaries the chapter on the ants is at the very end of the section on beasts following the chapter on the hedgehog, after which begins the avium. Of the only Third Family bestiary I had access to the chapter on the ant was preceded by the hedgehog and followed by the hydra. Finally, in *DC* bestiaries the ant is preceded by the chapter on the beaver and followed by the chapter on the hedgehog. Apart from *DC* bestiaries, the Latin bestiaries that are grouped together sometimes differ as not all of the bestiaries in the same family were copied from the same bestiary. However, each family group is more or less consist in regards to where the chapter of the ant falls within the bestiary, suggesting that perhaps the order was intentional.

Beginning with the B-Is bestiaries, the chapter on the ant is preceded by the chapter on the hoopoe. The behavioral characteristic of the hoopoe that is described in Latin bestiaries is the behavior of the young hoopoe that pulls out the old feathers and cares for the eyes of their parents when they are old, of which the moral is that children should care for their parents when they grow old.¹⁷⁴ Following this, the chapter also describes how hoopoes collect human feces

¹⁷⁴ McCulloch, *Mediaeval Bestiaries*, 126.

to build nests with and feeds on bad-smelling excrement.¹⁷⁵ The chapter that follows the ant in B-Is bestiaries is the chapter on the siren and onocentaur. Both the siren and the onocentaur have two natures, as the siren is half human and either half bird or half fish, and the onocentaur is half man and half donkey.¹⁷⁶ Both creatures are seen to have negative characteristics because of their dual natures. There are similarities between both animals' characteristics and the characteristics of the ant. Both the hoopoe and the ant collect food even though the kind of food collected is completely different. Though, more interestingly, is that the chapter on the ant, which contains a description of ant-lions, is followed by a chapter on sirens and onocentaurs, both of which also have a hybrid nature. Baxter argues for a more biblical connection between these three creatures, as he suggests that the chapter on the hoopoe illustrates how one should follow the fifth commandment, that is laws given by God, that the chapter on the ant represents the way one should follow the old testament and how one should reject the false Word, and that the chapter on the siren and onocentaur represents the corruption and rejection of the Word of God.¹⁷⁷

H bestiaries place the chapter of the ant between the chapter on the lizard and the chapter on the asp. The characteristic of the lizard is that when it grows old and goes blind, it will seek sunlight which will renew its vision.¹⁷⁸ No moralization is provided for this characteristic. The characteristic of the asp is that it will avoid being lured out of its home through song by pressing one ear into the ground and covering the other with its tail.¹⁷⁹ The asp is named for its poisonous bite, and, therefore, its allegory is negative as it "represents the wealthy who press one ear to earthly desires and whose other ear is plugged with sin."¹⁸⁰ There

¹⁷⁵ McCulloch, *Mediaeval Bestiaries*, 126; David Badke, "Hoopoe," *The Medieval Bestiary*, accessed May 17, 2022, <https://bestiary.ca/beasts/beast243.htm>.

¹⁷⁶ McCulloch, *Mediaeval Bestiaries*, 166.

¹⁷⁷ Baxter, *Bestiaries and their Users*, 42-3.

¹⁷⁸ McCulloch, *Mediaeval Bestiaries*, 141.

¹⁷⁹ McCulloch, *Mediaeval Bestiaries*, 88; David Badke, "Asp," *The Medieval Bestiary*, accessed May 17, 2022, <https://bestiary.ca/beasts/beast268.htm>.

¹⁸⁰ McCulloch, *Mediaeval Bestiaries*, 88-9.

are no obvious connections between the ant and these two animals, suggesting that the only reason for this order in these bestiaries is because they copy Book II of *De bestiis et aliis rebus*.

Transitional bestiaries place the chapter of the ant between that of the weasel and the ibex. Weasels are described as animals that conceive in the mouth and give birth through the ear, and are cleaver because they keep moving their young to different places after they are born.¹⁸¹ Weasels represent people who hear the Word of God but then do nothing with what they heard.¹⁸² The characteristic described of the ibex is the strength of its two horns, which the ibex can catch itself with if it falls or jumps from the top of a mountain.¹⁸³ The ibex represents people who overcome the problems of the world through the help of the Old and New testaments.¹⁸⁴ Unfortunately, there is not much of a connection between the ant and these animals, apart from the moral of the second characteristic of ants, which shows how people should separate the literal and spiritual meanings of the bible, as the morals of each animal are connected to the Word of God.

Second Family bestiaries place the chapter of the ant at the end of the section on beasts, just after the chapter of the hedgehog. The hedgehog is described as an animal that looks like a suckling pig that is covered in quills, which protect it from danger and help it to gather food for its children.¹⁸⁵ The hedgehog gathers food for its children by climbing a vine, shaking off grapes, and then rolling on the grapes on the ground so they get stuck to its quills.¹⁸⁶ Orienting these two chapters beside each other make sense as the hedgehog and ant have similar behaviors, as both the hedgehog and the ant climb up plants, vines and wheat respectively, to gather food. This characteristic of the hedgehog moralizes how people should care for

¹⁸¹ McCulloch, *Mediaeval Bestiaries*, 186-7.

¹⁸² David Badke, "Weasel," The Medieval Bestiary, accessed May 17, 2022, <https://bestiary.ca/beasts/beast150.htm>.

¹⁸³ McCulloch, *Mediaeval Bestiaries*, 132.

¹⁸⁴ David Badke, "Ibex," The Medieval Bestiary, accessed May 17, 2022, <https://bestiary.ca/beasts/beast154.htm>.

¹⁸⁵ McCulloch, *Mediaeval Bestiaries*, 124.

¹⁸⁶ McCulloch, *Mediaeval Bestiaries*, 124.

themselves and their “spiritual fruits,” so the devil does not take them.¹⁸⁷ In other words, Christ is the “true vine” without which Christians cannot bear fruit, and the hedgehog represents the devil who steals the fruit.¹⁸⁸ The hedgehog’s representation as the devil is significant, especially for BL, Royal MS 12 F XIII, the chapter on ants in this bestiary both follows the chapter on the hedgehog and includes a description of the ant-lion, which was also known to represent the devil.

In CUL, MS Kk.4.25, a Third Family bestiary, the chapter of the ant is also preceded by the chapter on the hedgehog like Second Family bestiaries, but is followed by the chapter on the hydra. The characteristic of the hydra is that once it is covered in mud, it will enter the mouth of a sleeping crocodile to be swallowed, after which it will eat its way out of the crocodile, killing it.¹⁸⁹ Allegorically, the crocodile represents hell in which Christ (the hydra) went in to save the souls trapped there.¹⁹⁰ There are no similarities between the hydra and the ant that would suggest the importance of grouping these chapters.

Finally, *DC* bestiaries place the chapter of the ant between the chapters of the beaver and the hedgehog. The beaver is described as a gentle animal that is forced to bit off its testicles and throw them at a hunter to remain unharmed.¹⁹¹ The beaver represents how people who want to live chaste lives should remove their sin and throw it at the devil so he will leave them alone,¹⁹² thus representing human renunciation of the devil.¹⁹³ The characteristic of the beaver is similar to the second characteristic of the ant, though the ant separates grain so it does not die of starvation whereas the beaver removes its testicles so it is not harmed by hunters.

¹⁸⁷ McCulloch, *Mediaeval Bestiaries*, 124.

¹⁸⁸ Baxter, *Bestiaries and their Users*, 43.

¹⁸⁹ David Badke, “Crocodile,” *The Medieval Bestiary*, accessed May 17, 2022, <https://bestiary.ca/beasts/beast272.htm>.

¹⁹⁰ McCulloch, *Mediaeval Bestiaries*, 129.

¹⁹¹ McCulloch, *Mediaeval Bestiaries*, 95.

¹⁹² McCulloch, *Mediaeval Bestiaries*, 95.

¹⁹³ Baxter, *Bestiaries and their Users*, 46.

Interestingly, the beaver and the hedgehog have similar moralizations of protecting one's self from sin so the devil will not harm them.

In conclusion, from this textual analysis of these forty-one bestiaries, it is obvious that the inclusion of ant-lions and gold-digging ants in some bestiaries contrasted their characteristics with that of the ant based on their order in the chapter. The consistencies in which the chapter on ants is presented in different versions of Latin bestiaries show that the morals represented by the ant's three characteristics were understood by the scribes of bestiaries in the same way as they were understood by classical authors. The inclusion of descriptions of ant-lions and gold-digging ants in Latin bestiaries were minimal, though not insignificant, and their placement at the end of the chapter suggests a gradual and orderly change in animal as the chapters begin describing harmless ants that collect grain, then describe violent ants that collect gold, and finish by describing ants that eat other ants and die because of their dual nature. Though the order in which the chapter appears in certain versions of bestiaries appears random, like that of H and Transitional bestiaries, other bestiaries intentionally grouped the chapter of the ant with similar animals like that of the siren and onocentaur, and the hedgehog. Placing the chapter of the ant beside chapters on animals with similar behaviors or morals emphasizes these similarities for both the ant and the other animals. The order of both the ants within the chapter and the chapter within its respective bestiary were significant for the interpretation of the good and bad moral representations of these various kinds of ants. The emphasis on the contrast of good and bad characteristics of ants can also be seen in the treatment of the imagery of these creatures, which will be discussed in the following chapter.

Chapter 3 – The Iconography of Ants

The iconography of ants, ant-lions, and gold-digging ants vary between each creature and between the different sources they appear in. As will be seen in this chapter, out of the three types of ants mentioned in Latin bestiaries, images of ants are the most common to appear alongside the text in those respective chapters if the bestiary is illuminated. Though images of ant-lions and gold-digging ants appear in other medieval works on natural history and geography, such as in the *Wonders of the East* and on *mappae mundi* like the Ebstorf Map and the Hereford Map, their treatment is not as regular or as consistent as that of the ant in bestiaries. One explanation for this consistency is the large influence previous bestiaries and other sources had over the production of bestiaries, as was seen in the previous chapters. Sources that contain imagery of gold-digging ants differ from bestiaries as they followed multiple different traditions, while bestiaries were more consistent because they only followed one tradition. However, in the bestiaries where ant-lions and gold-digging ants are mentioned alongside ants, the images that accompany those chapters only depict ants rather than the two more aggressive counterparts. The lack of images of ant-lions and gold-digging ants in chapters that contained their descriptions suggests that one of the functions of these images were as mnemonic devices to help remember the good characteristics of ants. The images of the ant, the ant-lion, and the gold-digging ant reflect and emphasize the characteristics of each creature in their respective texts, and the difference in the images of ants and gold-digging ants reflects the importance bestiaries put on the good qualities of the animals described in them.

The analysis of the images in this chapter is split into three sections, one for each kind of ant mentioned in Latin bestiaries, and includes a visual analysis of each of the images and a comparison of the images, as well as a comparison to the content included in the text of the respective source where applicable. Descriptions of specific image – text relationships are

included in this analysis when the relationship between a specific image and its corresponding text is different from others of the same type of ant. However, many of the ant images specifically do not have a deeper connection to their respective texts, apart from representing the characteristics of the ant, nor does the content of these images contradict their corresponding texts. The images, as will be seen from the analysis below, emphasize the behavior of ants, ant-lions, and gold digging ants. Apart from the content of the images, the analysis will focus on the differences between portrait and narrative images, the size of the images, and the use of color, space, design, and repetition and how these different elements emphasize the characteristics of each kind of ant.

3.1 *Formicae* – Ants

The same consistency of the text on ants in multiple Latin bestiaries appear in the images of ants included in illuminated bestiaries. Though the color, design, and type of image change from bestiary to bestiary reflecting the different artists that bestiaries often had, the overall content of these images remain the same: they all depict ants and they all display one or more of the important qualities of ants that are moralized within the texts. Unlike other animals in bestiaries, images of ants never appear as allegorical images that supply additional, “extratextual interpretations” of these creatures.¹⁹⁴ Rather, these images of ants appear as either portrait or narrative images that emphasize these good characteristics of ants. The consistency of these images between bestiaries reflects the influence bestiaries had on each other as well as the mnemonic purpose of emphasizing the positive characteristics of ants over the negative characteristics of ant-lions and gold-digging ants, especially in the chapters that mention all three creatures.

¹⁹⁴ Hassig, *Medieval Bestiaries*, 12.

Illustrations of ants in illuminated bestiaries are less detailed than those of other animals within the same bestiary. The ants themselves frequently appear as “a series of dots or bean-shaped objects with legs”¹⁹⁵ and often appear either black, grey, red, or brown in color, though the background of the images often varies, especially between portrait and narrative images. Out of the illustrated bestiaries analyzed in this thesis, there are six that contain portrait images of ants. The rest of the images are narrative images that illustrate the three characteristics of ants, that of working together for the common good, dividing their food in two so they do not starve, and the ability to distinguish between wheat and barley.

Portrait images of ants depict the ants in isolation and without being involved in some form of scene or narrative.¹⁹⁶ Of these six portrait images, one is from an H bestiary produced in the mid-thirteenth century,¹⁹⁷ one is from a DC bestiary produced in the early thirteenth century,¹⁹⁸ and the other four are Second Family bestiaries that were produced between the late twelfth and early fourteenth centuries.¹⁹⁹ Since these bestiaries were produced throughout the period when bestiaries were at the height of their popularity, this suggests that portrait images of ants were not used at a specific point in the production of bestiaries nor did they evolve into narrative images of ants.

These six images depicting portraits of ants differ in style, background, and color. The ants depicted in BnF, Lat. 6838B are quite detailed despite appearing in a very simple image

¹⁹⁵ David Badke, “Ant,” *The Medieval Bestiary*, accessed February 14, 2022, <http://bestiary.ca/beasts/beat218.htm>.

¹⁹⁶ Hassig, *Medieval Bestiaries*, 10.

¹⁹⁷ Bibliothèque Municipale de Valenciennes, MS 101.

¹⁹⁸ Épinal, Bibliothèque Multimédia Intercommunale d'Épinal, MS 209, <https://galeries.limedia.fr/ark:/18128/dg7wbd4gmfvkhqx0/p151>.

¹⁹⁹ New York, Pierpont Morgan Library, MS M 890, <https://www.themorgan.org/collection/bestiary/159535/15>; London, British Library, Additional MS 11283, http://www.bl.uk/manuscripts/Viewer.aspx?ref=add_ms_11283_fs001r; Paris, Bibliothèque Nationale de France, Lat. 11207, <https://gallica.bnf.fr/ark:/12148/btv1b53188245c/f41.item>; Paris, Bibliothèque Nationale de France, Lat. 6838B, <https://gallica.bnf.fr/ark:/12148/btv1b10464770j/f43.item>.

(fig. 1).²⁰⁰ The ants are shown in a geometric design with one ant in the center and one ant in each of the four corners of the image. They have three distinct segments, with eight legs extending out from between the segments, and two eyes on the furthest left segment representing the head. The only color to appear in this portrait is the black outline and the grey color of the ants, as the background is blank. This image, unlike the other portrait images, is quite large as a lot of space was left for the illumination.

In contrast, BMI, MS 209 and BnF, Lat. 11207 are very small as the images appear to have either been left with very little space or the artist found little space to include images of the ant, as is characteristic for the illustrations of the other animals in these same bestiaries. BMI, MS 209 is similar to BnF, Lat. 6838B as it also depicts ants in a geometric design with a blank background (fig. 2).²⁰¹ These eight ants appear diagonally in the space, are black in color, and have minimal detail as they look like splotches of ink with lines coming out of them. BnF, Lat. 11207, on the other hand, only depicts two ants in its small space, with one ant in front of the other in a line (fig. 3).²⁰² Both ants are brown in color and have three segments with the legs extending out of the middle segment. This image has a red background.

Bibliothèque Municipale de Valenciennes, MS 101 and BL, Additional MS 11283 also depict ants in a geometric design, though these images are larger than the previous two. Bibliothèque Municipale de Valenciennes, MS 101 shows eight ants in a geometric design with three ants on the left and another three on the right with two ants in the center (fig. 4).²⁰³ The ants have three segments, with multiple legs extending out of each segment and two eyes on each of the outside segments. The ants are red with a black outline and are overtop a blue background. BL, Additional MS 11283 depicts seven ants in a geometric pattern horizontal to

²⁰⁰ BnF, Lat. 6838B, fols. 19r.

²⁰¹ BMI, MS 209, fol. 73v.

²⁰² BnF, Lat. 11207, fol. 17r.

²⁰³ Bibliothèque Municipale de Valenciennes, MS 101, fol. 197v.

a plant on the right side (fig. 5).²⁰⁴ These ants also have three distinct segments, though each segment has two legs extending out of it. There is no color in this image, but the style in which these ants are drawn is different from the rest of the portraits.

The final portrait of ants is from Pierpont Morgan Library, MS M 890. Like Additional MS 11283, there is also no color in this image. MS M 890 depicts four ants, each with four legs and heads with two eyes and two antennae (fig. 6).²⁰⁵ There appears to be hills in the background that are represented by curved, bumpy lines. Though this illustration is also small, it does not show the ants in a geometric design. This small portrait illustration of ants reflects the text it accompanies, as even though this text describes the three characteristics of ants, it does so very briefly and does not provide the moralization of the characteristics that the chapter usually provides.²⁰⁶

The use of portrait images of ants in these instances must have been up to the decision of the artist as there is nothing that stands out from the chapter on ants that differs from other bestiaries with narrative images. Apart from the unusually short text in MS M 890, the texts that accompany the other five portrait images are consistent with the texts usually provided in the chapter of ants in bestiaries. Each describes the three characteristics of ants and the moralizations that accompany them. Furthermore, the space given to these portrait images is inconsistent between themselves, though these spaces are smaller than the space given to a lot of the narrative images of ants in other bestiaries, as will be seen below. This suggests that artists used portrait images in spaces where they could not fit a larger narrative image.

Since these portrait images have very little detail apart from the ants themselves, it is hard to say whether or not they are depicting a specific characteristic of the ant, though it is

²⁰⁴ BL, Additional MS 11283, fols. 15v-16r.

²⁰⁵ Pierpont Morgan Library, MS M 890, fol. 8v.

²⁰⁶ Pierpont Morgan Library, MS M 890, fol. 8v.

possible that the geometric patterns could represent the ant's first characteristic of working in union to gather good. Of course, the geometric designs in these images were an aesthetic choice made by the artist.²⁰⁷ However, like Hassig's interpretation of bee iconography in bestiaries where their appearance in neat rows represents orderliness, organization, and egalitarianism,²⁰⁸ these same values may be interpreted from these geometric images. Furthermore, depicting multiple ants in the same way within an image – i.e. same size, same color, same form – makes the collective group the focus of the image, emphasizing the ant's work as part of a community, working together for a common goal.²⁰⁹ Ants working together as a collective is part of their first characteristic, and is one of the elements of ant behavior that was used as an exemplar in classical sources on ants, as was seen in chapter one.

The rest of the images of ants from the bestiaries used in this analysis are narrative images that emphasize the different characteristics of the ant. Unlike portrait images, narrative images are ones where the animal depicted appears with a background setting and the imagery corresponds to an action or characteristic that are common to that animal, and often include “pictorial devices meant to represent the passage of time, or the spatial or directional movement of a creature.”²¹⁰ These narrative images reflect one or more of the three characteristics of ants described in the corresponding texts, and often contain at least one of three iconographic elements: ants walking in lines, anthills separated by space or color, or ants in a crop of grain, representing the first, second, and third characteristics, respectively. There are some close similarities between certain bestiaries because they were copied from the same bestiaries or were copied from each other. However, illustrations of these characteristics are not limited to specific versions of bestiaries, despite the observation made by George and Yapp that most

²⁰⁷ Hassig, *Medieval Bestiaries*, 22.

²⁰⁸ Hassig, *Medieval Bestiaries*, 55.

²⁰⁹ Hassig, *Medieval Bestiaries*, 55.

²¹⁰ Hassig, *Medieval Bestiaries*, 11.

Second Family bestiaries omit stalks of wheat.²¹¹ Rather, much like that of the portrait images of ants, most of the narrative images that were included were up to the artist's discretion. These images consistently represent the characteristics of ants and they can be grouped based on which characteristic is being represented.

The first characteristic of ants, that of working together in unison to collect food, is represented by ants depicted walking in lines. This characteristic appears in most images of ants, as they are often depicted as walking in an orderly fashion no matter what they are doing. Though the portrait images of ants could be included as images that are understood to represent the first characteristic, they have no elements that suggest that they are narrative images. There are seven examples of narrative images of the first characteristic in this group of illuminated bestiaries. Out of these seven images, one is from a First Family, transitional marginal bestiary made in the early fourteenth century,²¹² four are Second Family bestiaries produced between the early thirteenth century and the fifteenth century,²¹³ one is a Third Family bestiary produced in the first half of the thirteenth century,²¹⁴ and the last is from a *DC* bestiary made in the late thirteenth century.²¹⁵ Like those of the portrait images, these narrative images of the first characteristic do not appear exclusively in early bestiaries. Rather, almost half of these images appear in later bestiaries and in different bestiary families.

The first example of a narrative image showing the first characteristic of ants is from BSB, Gall. 16, a marginal bestiary from the early fourteenth century that resides in the Isabella Psalter. The marginal illustration from this manuscript depicts ants on a green hill that has various plants on it (fig. 7).²¹⁶ In this image there are six brown ants, with detailed, triple-

²¹¹ George and Yapp, *The Naming of the Beasts*, 214.

²¹² BSB, Gall. 16, fol. 26r.

²¹³ AUL, MS 24, fol. 24v; Bodl., MS Ashmole 1511, fol. 36v; Koninklijke Bibliotek, Gl. Kgl. 1633-4, fol. 29v; CCC, MS 53, fol. 189r.

²¹⁴ CUL, MS Kk.4.25, fol. 75v.

²¹⁵ BL, Sloane MS 278, fol. 54v.

²¹⁶ BSB, Gall. 16, fol. 26r.

segmented bodies and eight legs. Five of these ants appear to be moving towards the left side of the image, while the sixth ant appears to be going up the hill. This image is fairly large because of the space left in the margin for these images, and the use of space within the image emphasizes the size of the ants in relation to the nature around them as the ants are clustered together in the middle. Unlike ant images from other bestiaries, this image is not accompanied with a text that describes the characteristics of ants. Rather, the bestiary in the Isabella Psalter was a planned pictorial cycle that is autonomous from the text of the psalter.²¹⁷ The image of the ants does not correspond with the text of the psalter but rather the meaning of the illustration would have been known to the viewer from viewing similar images from other bestiaries.

AUL, MS 24 (fig. 8)²¹⁸ and Bodl., MS Ashmole 1511 (fig. 9),²¹⁹ both early thirteenth-century Second Family bestiaries, contain similar illuminated images of ants. Both images show ants walking single-file in two lines on the left, walking towards three anthills with ants on them on the right. Both images have a gold background. The ants in AUL, MS 24 are lighter in color, either a light brown or white, and are outlined in black. These ants are triple-segmented, with four legs extending out of their bodies, and eyes and antennae on their heads, which are on the right side of their bodies. The anthills are red in color, each with one ant on them and one ant between each of the hills. The ants in Bodl., MS Ashmole 1511 are red, and there are less ants in this image than in AUL, MS 24. These ants are also triple segmented and have heads on the right side of their bodies, though they have eight legs. The hills in Bodl., MS Ashmole 1511 are green, and though there are ants on the hills, there are no ants between the hills. Both images take up very little space, with the width of AUL, MS 24 consisting of no

²¹⁷ Debra Hassig, "Marginal Bestiaries," in *Animals and the Symbolic in Mediaeval Art and Literature*, ed. L. A. J. R. Houwen (Groningen: Egbert Forsten, 1997), 175.

²¹⁸ AUL, MS 24, fol. 24v.

²¹⁹ Bodl., MS Ashmole 1511, fol. 36v.

more than four lines of the manuscript and the width of Bodl., MS Ashmole 1511 consisting of two or three lines.

CCC, MS 53 is an early fourteenth-century Second Family bestiary, with an illumination depicting eight bean-shaped ants walking between a field of wheat on the left and a green, grassy hill on the right (fig. 10).²²⁰ These ants are diagonal in relation to the rest of the images, and appear in a somewhat geometrical pattern. They are brownish-grey in color, are outlined in black, and have two eyes emphasizing where their heads are. The background is also made of gold foil. The space given to this image was also quite small, as can be seen from the frame of the illumination, which follows the text on the left unevenly.

Koninklijke Bibliotek, Gl. Kgl. 1633-4 is a fifteenth-century Second Family bestiary, with a narrative image of ants that is less aesthetically pleasing than some of the other images of ants from earlier bestiaries (fig. 11).²²¹ This image shows numerous black ants walking over a brown hill in the background. These ants are also triple-segmented though they appear to only have four legs. The ants have no distinguishing features that show which direction they are going in, and many are depicted in the air rather than on the hill. However, this is one of the larger images of ants that appear depicting the first characteristic of ants, as it takes the space of several lines at the bottom of the leaf. The lack of a geometric pattern in the placing of the ants in this image suggests that organization and unity were not one of the main messages of this image, which can also be seen in the larger narrative images that show multiple characteristics, as will be discussed below.

CUL, MS Kk.4.25 is the only Third Family bestiary used in this study. One of the images of ants it contains illustrates the first characteristic without the other two characteristics

²²⁰ CCC, MS 53, fol. 189r.

²²¹ Koninklijke Bibliotek, Gl. Kgl. 1633-4, fol. 29v.

(fig. 12).²²² CUL, MS Kk.4.25 depicts several dozen ants walking in orderly lines of nine ants towards a field of wheat on the right side. The ants are red and appear as three overlapping dots, or perhaps as “beans” with legs. This image had more space between the lines of the text than most of the portrait images discussed earlier, but the it takes up the majority of space, with the wheat on the right of the image almost overlapping with the text above and below the illustration. However, unlike the rest of the illuminated bestiaries in this study, CUL, MS Kk.4.25 has two illustrations for its chapter on ants (fig. 27). The other narrative image is larger and depicts multiple characteristics in the same image. The second image appears to have been left space below the text on the folio as the text continues on the next page, but the first image was drawn between the lines of text that separate the chapter on ants from the previous chapter. This suggests that this image was added as an afterthought to this chapter.

BL, Sloane MS 278 is the last example in this body of bestiaries that shows the first characteristic of ants. Sloane MS 278 is a late thirteenth-century *DC* bestiary, which shows ants walking single-file in two lines away from their home, as represented by a castle on the left, towards a field of wheat in search of food on the right (fig. 13).²²³ These ants appear as quadrupedal, dog-like creatures with strangely long feet, a markedly different depiction than the more common depiction of the insect. These ants are brown, and have heads with one eye and sometimes a mouth on the right side of their bodies. The background is blue with small white flowers with three petals, and the castle is yellow in color. This image is larger as it is as long as the column of writing on the folio. This image of ants, more so than the others, emphasizes the movement of the ants in their search for food as they are shown going from their home to a field of wheat, and perhaps even suggests an element of time.²²⁴

²²² CUL, MS Kk.4.25, fol. 75v.

²²³ BL, Sloane MS 278, fol. 54v.

²²⁴ Hassig, *Medieval Bestiaries*, 56.

The narrative images of ants that depict the second characteristic of ants, where they separate their food into two parts so the grain does not germinate and the ants do not starve in the winter, is represented by a more aesthetic design choice of either multiple hills, that are always even in number and often alternate color, or of one hill that alternates color. The alternation of color and the equal representation of hills emphasize the ant's separation of grain into two pieces and, by extension, one's own ability of distinguishing between the Old Testament and the New Testament.²²⁵ Illustrations of this characteristic appear in seven of the twenty-eight illuminated bestiaries, the majority of which are thirteenth-century Second Family bestiaries,²²⁶ while one is a B-Is bestiary²²⁷ and the remaining one is a *DC* bestiary.²²⁸

The B-Is bestiary, CCC, MS 22, is a twelfth-century bestiary that depicts two anthills that are separate from each other, with ants walking on them and between them, with a plant, most-likely a stalk of wheat, on the right side (fig. 14).²²⁹ The ants are brown in color and are drawn as two circles with a line connecting them, and have either six or eight legs coming out of their abdomen. The plant on the right is drawn in brown with red highlights and the hills are also drawn in brown but have blue highlights. The touches of color in this image draw focus to the iconographical details of the plant and the anthills, rather than the ants themselves, emphasizing the separating of the food by the ants.

²²⁵ Hassig demonstrates the same idea of the importance of the alternation of color and repetition in her analysis in *Medieval Bestiaries*.

²²⁶ New York, Pierpont Morgan Library, MS M 832, fol. 7v, <http://ica.themorgan.org/manuscript/page/11/158985>; London, British Library, Harley MS 3244, fol. 50r, http://www.bl.uk/manuscripts/Viewer.aspx?ref=harley_ms_3244; Cambridge, Cambridge University Library, MS Ii.4.26, fol. 29r, <https://cudl.lib.cam.ac.uk/view/MS-II-00004-00026/73>; London, British Library, Harley MS 4751, fol. 32r, http://www.bl.uk/manuscripts/Viewer.aspx?ref=harley_ms_4751_fs001r; Bodl., MS Bodley 764, fol. 53v.

²²⁷ CCC, MS 22, fol. 167r.

²²⁸ New York, Pierpont Morgan Library, MS M 832, fol. 7v, <http://ica.themorgan.org/manuscript/page/11/158985>.

²²⁹ CCC, MS 22, fol. 167r.

Pierpont Morgan Library, MS M 832 is a mid-twelfth-century *DC* bestiary that also shows the second characteristic of ants. This image shows two anthills, one in front of the other, with ants on both hills (fig. 15).²³⁰ The hills are outlined in red and shaded with green. The ants appear only as outlines, though in two colors, red and black. They appear as small ovals or oblong, rounded shapes, with multiple legs, but do not have much detail otherwise. This image is quite small and crowded compared to that of CCC, MS 22, but the duality of the hills and the contrasting colors emphasize the splitting of the grain in two by the ants.

BL, Harley MS 3244 and BnF, Lat. 3630, both mid-thirteenth-century Second Family bestiaries are grouped together because of their similar iconography. The narrative images show ants on top of dome-shaped hills. BL, Harley MS 3244 shows droplet-shaped ants with round heads on top of two anthills, one of which sits in front of the other (fig. 16).²³¹ There are numerous dots on the hills, and similar shapes appear to be in the mouths of some of the ants, suggesting that these dots represent food or grain. The only color in this image is the green border. The ants appear as brown outlines with a lighter brown wash for shading. The way the hills are drawn give a sense of depth as it shows one hill behind another, but it also emphasizes ants dividing their grain in two, in the same way as the previous images represented this.

BnF, Lat. 3630, similarly depicts ants on a roundish hill, though this hill alternates green and white in color, and sits in front of a red background (fig. 17).²³² The ants themselves appear to be climbing the hill from both sides. The ants are quadrupedal and have one eye on the head, though their bodies appear more dog-like than insect-like. Both images take up quite a bit of space in their respective leaves. The alternation of color on the hill is both aesthetically pleasing and even as the hill has two white sections and two green sections. Though it is possible that

²³⁰ Pierpont Morgan Library, MS M 832, fol. 7v.

²³¹ BL, Harley MS 3244, fol. 50r.

²³² BnF, Lat. 3630, fol. 85r.

each section represents a different hill, the even repetition of colors more likely reflects the division of the grain in half by ants.

The final three narrative images that show the second characteristic of ants have also been grouped together for their similar iconography. CUL, MS Ii.4.26, BL, Harley MS 4751, and Bodl., MS Bodley 764, all of which are also thirteenth-century Second Family bestiaries, depict four separate anthills in their images. CUL, MS Ii.4.26, though only partially drawn, shows the beginning of this narrative image with four round hills on the right side (fig. 18).²³³ Harley MS 4751 also depicts four hills on the right side (fig. 19).²³⁴ These hills alternate orange and green in color, and sit in front of a red background with white designs. The ants on the hills are black in color, and have longer insect-like bodies, with four legs and antennae on top of their heads. MS Bodley 764 is a more stylized version with the same imagery (fig. 20).²³⁵ The image also depicts four hills, though these hills alternate green and brown in color, and the brown hills have stylized plants of wheat and barley on them. The background of this image is made of gold foil. The ants are made of dark brown color and have triple-segmented bodies with eight legs. Again, the equal amount of hills and the alternating color reflect the division of grain in two by ants. The alternation of green and orange/brown is significant as these colors “are opposites on the color wheel, forming an antithetical warm-cool visual relationship.”²³⁶ This visual relationship along with the placement of the ants could possibly even reflect the four seasons of the year, especially in MS Bodley 764 as there are no ants depicted on the second hill. Furthermore, these images are significantly larger than the images that have been looked at previously, which provided more space for the narrative scene. This draws the viewer’s attention to the alternating hills rather than the ants themselves.

²³³ CUL, MS Ii.4.26, fol. 29r.

²³⁴ BL, Harley MS 4751, fol. 32r.

²³⁵ Bodl., MS Bodley 764, fol. 53v.

²³⁶ Hassig, *Medieval Bestiaries*, 33.

Narrative images of the third characteristic of ants, their ability to distinguish between wheat and barley, are depicted by ants climbing up stalks of wheat. There are only three examples of this characteristic in this group of bestiaries, one from a mid-thirteenth-century First Family, H bestiary, and the other two from *DC* bestiaries, one from the late thirteenth century and one from the fourteenth century. The images of BnF, Lat. 14429 and BSB, Clm 2655 were only available in black and white, so I was not able to analyze the colors of those images. These images are more condensed than other images of ants, despite their large size. Furthermore, the placement of the ants in these images does not follow a geometrical pattern, again emphasizing their actions as opposed to their unity as a whole.

BnF, Lat. 14429, an H Family bestiary, shows a narrative image of three ants climbing up stalks of wheat on the right, with three ants walking in different directions on the left (fig. 21).²³⁷ The ants are dark in color and have triple-segmented bodies with eight legs. This image is smaller than the others from the *DC* bestiaries as there was not much space left for images in this manuscript. Both BSB, Clm 2655 and BSB, Clm 6908, *DC* bestiaries from the late thirteenth and fourteenth centuries, respectively, have similar images. BSB, Clm 2655 depicts several ants climbing up stalks of wheat with hills in the foreground, which is framed by a five-petalled gothic rose window (fig. 22).²³⁸ These ants are dark in color and have bodies that appear like conjoined dots with legs extending out of them. BSB, Clm 6908 similarly shows several ants climbing up stalks of wheat with a green hill below (fig. 23).²³⁹ This image is also framed by a five-petalled gothic rose window that is green and white in color. The ants are black in color and similarly appear as conjoined dots with legs extending out of their bodies.

²³⁷ BnF, Lat. 14429, fol. 116v.

²³⁸ Munich, Bayerische Staatsbibliothek, Clm 2655, fol. 100v, <https://www.digitale-sammlungen.de/en/view/bsb00112027?page=208>.

²³⁹ Munich, Bayerische Staatsbibliothek, Clm 6908, fol. 82v, <https://www.digitale-sammlungen.de/en/view/bsb00078560?page=170>.

Though the ants are not placed in a geometric pattern in these images, there are still elements of geometric design, specifically from the rose window that frames the narrative scene.

The final kind of narrative image that appears in bestiaries alongside the chapter on ants illustrates multiple characteristics of them. Here, color plays less of a role in the meaning of the images than it did in those of the second characteristic of ants. Rather, the color across these images is relatively consistent throughout. This kind of narrative image exists in four examples from this group of illuminated bestiaries, three of which are from First Family, Transitional bestiaries, and are nearly identical. The last example is from CUL, MS Kk.4.25, the Third Family bestiary looked at above. These images are the largest of the narrative ant images analyzed in this body of illuminated manuscripts, which is perhaps the reason that they depict multiple characteristics rather than one.

Three Transitional bestiaries, Pierpont Morgan Library, MS M 81, BL, Royal MS 12 C XIX, and Getty Museum, MS 100 contain almost identical illuminations of ants showing both the first and third characteristics, as they either copied the same bestiaries, or copied each other. According to George and Yapp, Transitional bestiaries usually contain an illustration with a field of dense wheat on the left and anthill on the right with lines of ants walking between them.²⁴⁰ This is how ants are rendered in these three Transitional bestiaries, though there are some small differences between them, mostly attributing to the style of the artist. The text in these bestiaries is also almost identical, suggesting that these are either copies of each other, or they were all copied from the same bestiary.

Pierpont Morgan Library, MS M 81, the earliest of the three examples, made in the late twelfth century, depicts a dense field of wheat with green stalks and brown grain on the left

²⁴⁰ George and Yapp, *The Naming of the Beasts*, 214.

and a round, green anthill on the right (fig. 24).²⁴¹ Most of the ants are moving from the wheat to the anthill as they are shown carrying seeds of grain, though there are four ants at the bottom that are collecting grain from stalks that have fallen over. The ants are red in color, and have triple segmented bodies with eight legs. BL, Royal MS 12 C XIX, an early thirteenth century bestiary, depicts the same imagery, with a few slight variations (fig. 25).²⁴² The wheat and the anthill in this image are more stylized than in MS M 81. The ants are brown in color and their bodies, though still triple-segmented, are more defined. The ants in this image are split in directions as some are going to the anthill with food and others are going towards the field of wheat, whereas in MS M 81, most ants were returning to the anthill with food. Getty Museum, MS 100, a mid-thirteenth century bestiary, depicts the same imagery as the previous two bestiaries, though it is quite close in style to Royal MS 12 C XIX (fig. 26).²⁴³ The wheat and the anthill in MS 100 are almost identical to that of Royal MS 12 C XIX. These ants are also brown and their bodies have three segments. The direction the ants are going is obvious as it depends on the way the ants are facing and if they are holding food in their mouths. This image is more condensed than that of Royal MS 12 C XIX, as there is a gap of empty space to the right of the anthill and the ants are closer together in the rest of the image, forcing the viewer to look at the ants as a collective even more so as it is harder to distinguish between individual ants.

The final example of these narrative images is from CUL, MS Kk.4.25, the thirteenth-century Third Family bestiary. As mentioned earlier, this bestiary has an image of the first characteristic of ants, but it also has a larger narrative image that depicts iconographic elements of all three characteristics of ants. This narrative image shows ants coming from three anthills

²⁴¹ Pierpont Morgan Library, MS M 81, fol. 31v.

²⁴² BL, Royal MS 12 C XIX, fol. 24v.

²⁴³ Getty Museum, MS 100, fol. 23r.

on the left and going to the stalks of wheat on the right to collect food (fig. 27).²⁴⁴ The three hills on the right are of different sizes, add dimension as they are drawn one in front of the other, so the largest hill is further away. The hills and the wheat are green in color, though the paths between the hills and the food the ants carry away from the field of wheat are orange. The ants themselves are black in color and appear as three dots with multiple legs and two antennae.

Overall, the images of ants depicted alongside their texts in Latin bestiaries are consistent in terms of what content they emphasize and how they depict ants. The portrait images of ants vary in size, style, and color, though many of them incorporate geometric patterns and the overall image is often very simple in design. For the most part, portrait images of ants appear in bestiaries where there is not much space for an illumination. Though there are also examples of small narrative images in the twenty-eight illuminated bestiaries used in this study, narrative images more frequently occur as larger images as the space allows for more detail and more room to visually describe the characteristics of ants. Many ant images use geometric patterns to emphasize community and egalitarianism in ants and ants are always depicted in multiples to reflect their unity as a group to the viewer. Color plays a large role in the meaning of the images as well, as ants are always depicted in red or in a neutral color. Similarly, the contrasting colors in images that illustrate the second characteristic emphasize the dividing of grain into two by ants. Imagery of ant-lions and gold-digging ants were not made with the same consistency, as will be seen below, which shows that their images were not used to emphasize their good qualities in the same way as the images of ants in bestiaries.

²⁴⁴ CUL, MS Kk.4.25, fol. 75v.

3.2 *Formicaleon* – The Ant-Lion

Illustrations of the ant-lion are almost non-existent in comparison to those that exist for ants and gold-digging ants. None of the bestiaries I have found contain an illustration of the ant-lion. However, there are two portrait images of ant-lions that exist outside of the bestiaries I had access to. The first is found within Universitätsbibliothek Leipzig, Cod. gr. 35, a fourteenth-century version of the Greek *Physiologus*,²⁴⁵ which depicts both the version of the ant-lion described in the *Physiologus* and the insect described by authors like St. Gregory and Isidore of Seville (fig. 28).²⁴⁶ The figure in the illustration shows the ant-lion as described in the *Physiologus* with the head and front legs of a lion and the tiny body and back legs of an ant on the left, and on the right of the illustration is a large, round insect with six legs. This image shows the two sides of the ant-lion, representing both natures in the same image. The lion part of the ant-lion is yellow in color, while the insect is solid black. The only other illustration of an ant-lion that I have found is in the Fourth Family bestiary Cambridge University Library, Gg. 6. 5 and is presented as a figure in Druce's "An Account of the Murmekoleon or Ant-Lion."²⁴⁷ This illustration also depicts two animals, an ant with eight legs on the left and a larger, more rotund ant-lion with eight pointy legs on the right.²⁴⁸

The images of ant-lions contrast with images of ants, in the same way the two creatures contrast in the text in Latin bestiaries. The lack of imagery of the ant-lion, not only in bestiaries but also in other medieval sources, suggests that images were not important to understand what the ant-lion was but also that its negative characteristic of having a dual nature and its violent

²⁴⁵ David Badke, "Universitätsbibliothek Leipzig, Cod. gr. 35," The Medieval Bestiary, accessed May 18, 2022, <https://bestiary.ca/manuscripts/manu101228.htm>.

²⁴⁶ Leipzig, Universitätsbibliothek Leipzig, Cod. gr. 35, fol. 34r, <https://digital.ub.uni-leipzig.de/mirador/index.php>.

²⁴⁷ Druce's "An Account of the Murmekoleon or Ant-Lion," 350.

²⁴⁸ Druce describes the legs of the ant-lion as "unsatisfactory." Druce's "An Account of the Murmekoleon or Ant-Lion," 351.

tendencies did not need a mnemonic device to remember. The images of ants, on the other hand, are frequent and always emphasize one or more characteristics that provide an important allegory as is described in their corresponding texts. Ant-lion images also show that ant-lions were not regarded in the same way as ants were, and that the way they were used in bestiaries was more to contrast the good behavior of ants rather than to provide an allegory for human behavior.

3.3 The Gold-Digging Ant

As was seen in the first part of this chapter, images of ants in Latin bestiaries are as consistent between bestiaries as the texts from the same chapters, in terms of both content and iconographical details. Though most images had details that differed because of the different artists who created them, their meanings and their content would have been easily recognizable to both literate and illiterate viewers. Images of gold-digging ants, on the other hand, are not at all consistent in comparison to that of ants. Rather, their treatment is the same as how the stories of gold-digging ants appear in classical and medieval sources: the main content is the same, but the details can differ wildly. Out of the ten images of gold-digging ants I found in medieval sources, four images depict these creatures as ants or insect-like animals, while the other six appear as dogs or dog-like animals.²⁴⁹ Some images of gold-digging ants are quite large, narrative images, like those that appear in the *Wonders of the East* manuscripts, while others are small portrait images, like those that appear on the Ebstorf map and the Hereford map. These inconsistent depictions are a result of the various textual descriptions of the physical qualities of these ants. However, this inconsistency also emphasizes that the purpose of these images was to illustrate gold-digging ants and their legend rather than to be used as mnemonic

²⁴⁹ Though quadrupedal is a term that adequately describes the creatures that represent gold-digging ants, I will refrain from using it as the main descriptor as some of the insect-like creatures, and even some ants in bestiaries, are also represented with four legs.

devices to remember their characteristics and the morals associated with them, like the images of ants in bestiaries.

From the forty-one Latin bestiaries analyzed in this thesis, nine mentioned gold-digging ants, and out of those nine, five are illustrated: three with images of ants and two with images of gold-digging ants. The two that depict gold-digging ants, Vat., Reg. Lat. 258 and BL, Royal MS 2 B VII, depict the ants in narrative images. Vat., Reg. Lat. 258, a thirteenth-century Second Family bestiary, depicts gold-digging ants literally as three ants are shown bringing out objects made of gold, such as a ring and a brooch, from a hole in the top right corner (fig. 29).²⁵⁰ These ants have triple-segmented bodies with eight legs and two antennae. The larger ant also has three claws on each foot, which is a reference to the gold-digging ant's otherness as ants are not shown with claws in their images. The gold-digging ants are brown in color, much like the regular ants, and the golden objects are yellow in color. This image of gold-digging ants is unique as no other image illustrates the gold that these ants dig up as physical objects made out of gold that would have been recognizable to medieval viewers. This image corresponds to the accompanying text as gold-digging ants are described as the fourth nature of the ant rather than as a different kind of ant,²⁵¹ meaning either the person who copied this bestiary mistook the description of gold-digging ants to be the fourth nature of ants, or intentionally described gold-digging ants in this way to show a negative characteristic of the ant to contrast the other positive characteristics.

BL, Royal MS 2 B VII is the other bestiary that contains narrative images of gold-digging ants, though like BSB, Gall. 16, these images are part of a marginal bestiary within the Queen Mary Psalter. Royal MS 2 B VII contains two marginal illustrations of gold-digging

²⁵⁰ Vat., Reg. Lat. 258, fol. 22v.

²⁵¹ Vat., Reg. Lat. 258, fol. 22r.

ants, which is consistent for most of the animals in this marginal bestiary,²⁵² both of which depict these creatures as dogs.²⁵³ The first, on folio 95v, shows multiple small dogs on an anthill with trees on either side of the hill (fig. 30). The other scene, on folio 96r, shows three dogs guarding the hill from two men armed with swords and shields (fig. 31). In both images, the hill is brown in color and the leaves on the trees are green in color. However, the dogs in the first image are smaller and have no color, whereas in the second image the dogs are significantly larger in comparison to the hill and have some brown shading. The men on the right of the second image are dressed in red clothing, and the leftmost man has a green robe overtop. Both of their shields are brown. The first image on folio 95v is reminiscent of some of the narrative images of ants that show the first and second characteristics of ants, though the artist drew small dogs instead. The second image on folio 96r displays the violent, territorial characteristic of gold-digging ants that is described in many classical and medieval texts. As these images are from a marginal bestiary, there is no corresponding text that describes these creatures, but rather the viewer of these images would have been able to recognize that these depicted gold-digging ants.

The earliest images of gold-digging ants appear in the *Wonders of the East* manuscripts. The story of gold-digging ants in the *Wonders of the East* is one of the few examples in the text where a “human is able to take something away from the monstrous territory,”²⁵⁴ and this accomplishment is reflected in the images that accompany the text. The images in these manuscripts are narrative images that depict these creatures as dogs, as well as portray the significant characteristics of the story that are described in the text. The earliest of the three manuscripts of the *Wonders of the East*, that of BL, Cotton MS Vitellius A XV, dates to

²⁵² Hassig, “Marginal Bestiaries,” 176.

²⁵³ BL, Royal MS 2 B VII, fol. 95v-96r.

²⁵⁴ Kim, “Man-Eating Monsters and Ants as Big as Dogs,” 47.

between the end of the tenth century and the beginning of the eleventh century,²⁵⁵ and contains the largest illustration of gold-digging ants. Beginning at the top left of the illustration two ants are digging up gold from a hole;²⁵⁶ in the top right, three ants are attacking a male camel; and in the bottom half of the illustration, a man escapes with gold on a female camel, returning to a young camel tethered to a tree (fig. 32).²⁵⁷ Though the image is split into two registers, the rest is unframed and partially overlaps the text above and below the illustration.²⁵⁸ Even the final word of the text above the image, “fleogan,” is nearly surrounded by a dog-like ant that carries a piece of gold in its mouth, almost as if it “seizes the text within the monstrous body” of the gold-digging ant.²⁵⁹ The use of registers in this image illustrates different moments of the story,²⁶⁰ and the divide in the middle is reminiscent of the river that the gold-digging ants will not cross, as described in the text.²⁶¹ Most of the iconography in this image is outlined, though there are some details that contain color. Four of the ants in the top register are either brown or blank in color. The pieces of gold and the part of the tree that separates the top and the bottom parts of the image are reddish in color. The rest of the tree is brown, blue, and red in color. The man’s clothing is white or light blue in color. The sparing use of color draws the viewer’s eyes to the most important parts of the scenes, those of the ants digging up gold and attacking the camel, and of the man stealing the gold from the ants.

Similar iconographic details appear in the illuminations of the other two versions of the *Wonders of the East* in BL, Cotton MS Tiberius B V/1 (fig. 33) and Bodl., MS Bodley 614 (fig.

²⁵⁵ “Cotton MS Vitellius A XV,” Digitised Manuscripts, British Library, accessed February 12, 2022, http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Cotton_MS_Vitellius_A_XV.

²⁵⁶ Cesario offers another interpretation where the ants are standing guard on either side of the hole, Cesario, “Ant-Lore,” 279.

²⁵⁷ London, British Library, Cotton MS Vitellius A XV, f. 101r, http://www.bl.uk/manuscripts/Viewer.aspx?ref=cotton_ms_vitellius_a_xv_f094r.

²⁵⁸ Kim, “Man-Eating Monsters and Ants as Big as Dogs,” 49.

²⁵⁹ Asa Mittman and Susan Kim, *Inconceivable Beasts: The Wonders of the East in the Beowulf Manuscript* (Arizona: ACMRS, 2013), 10.

²⁶⁰ Hassig, *Medieval Bestiaries*, 12.

²⁶¹ *Wonders of the East*, 191, § 9.

34-5), produced in the eleventh and twelfth century, respectively.²⁶² The illuminations of gold-digging ants in these manuscripts are identical, and it is believed that Bodley 614 was most likely copied from Tiberius B V.²⁶³ The iconography of gold-digging ants in these manuscripts, both split into two illustrations, depict ants, again in the form of dogs, digging up gold in the first illustration and ants attacking a male camel while a man escapes on a female camel towards a young camel across the river in the second illustration.²⁶⁴ These images are more stylized than the one in Cotton MS Vitellius A XV, and are reminiscent of the artist of the Ebbo gospels. The different colors of the land in both Cotton MS Tiberius B V/1 and MS Bodley 614 give the images depth, as alternating colors did in the images of ants that showed their second characteristic. The leftmost image of Cotton MS Tiberius B V/1 shows orange or brown dog-like ants digging up gold on two hills. The nearer hill is blue in color and the hill farther away is white with red accents. The background is green to contrast the rest of the scene. The rightmost image from the same manuscript depicts orange dog-like ants attacking a brown camel on the left side of the river, while a man wearing a blue tunic escapes on a brown camel to the other side of the river. The background of this image is orange to contrast the rest of the image. MS Bodley 614 uses color in the same way as Cotton MS Tiberius B V/1, though the foremost hills in the first image are brown and the background is blue, and in the second image, the land on the left side of the river is a dark blue and the land on the right side of the river is orange. The use of color in the images of gold-digging ants in the *Wonders of the East* manuscripts aids in the narrative understanding of these illustrations.

²⁶² "Cotton MS Tiberius B V/1," Digitised Manuscripts, British Library, accessed February 12, 2022, http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Cotton_MS_Tiberius_B_V/1; "MS. Bodl. 614," Medieval Manuscripts in Oxford Libraries, accessed February 12, 2022, https://medieval.bodleian.ox.ac.uk/catalog/manuscript_1623.

²⁶³ "MS. Bodl. 614," Medieval Manuscripts in Oxford Libraries.

²⁶⁴ London, British Library, Cotton MS Tiberius B V/1, f. 80v, http://www.bl.uk/manuscripts/Viewer.aspx?ref=cotton_ms_tiberius_b_v!1_f002r; Oxford, Bodleian Library, MS Bodley 614, ff. 39r-v, <https://digital.bodleian.ox.ac.uk/objects/a43be554-c5b0-42f0-94e0-70222bb2a964/surfaces/ece9795d-976c-4e2a-b15b-2fe8605b9369/>.

Two other narrative images of gold-digging ants appear in separate late thirteenth-century manuscripts of Guillaume Le Clerc's *Bestiaire*: BnF, Français 1444²⁶⁵ and BnF, Français 14969.²⁶⁶ The first, Français 1444, made in France, is significantly less detailed than the illustrations mentioned thus far. Of the three illustrations included in the chapter on ants, only one represented the characteristics of gold-digging ants, depicting two dog-like creatures on top of an anthill (fig. 36). The two brown, quadrupedal creatures are standing on either side of a brown hill and appear to be howling. What is left of the background of the images appears to be red in color. This illustration does not include other iconographic details, like gold, camels, or fleeing men like the other gold-digging ant images mentioned above. It is only recognizable as an illustration of gold-digging ants because of the dogs and the contextualization of the chapter on ants.

The image of gold-digging ants in Français 14969, on the other hand, ventures away from the dog-like representation of these creatures. This bestiary does not depict the easily recognizable dog-like, gold-digging ants but rather shows ants in an insect-like form attacking a camel (fig. 37). In this image, a camel, standing near a river, is being swarmed by large ants and small dogs that appear to be coming from the nearby anthill on the left and a crop of wheat on the right. The horse in this image is blue in color and is wearing a brown bag on his back. The ants themselves are dark brown in color and appear in both a quadrupedal, dog like shape and a shape reminiscent of the images of ants seen in the first part of this chapter though with less detail. The river is blue and the ground on either side of the river is brown. The background is decorated with dark blue, green, and red stripes. In the margin beside the image is a man wearing a brown tunic, holding an axe-like tool in his right hand and something that looks like

²⁶⁵ Paris, Bibliothèque Nationale de France, Français 1444, f. 245r, <https://gallica.bnf.fr/ark:/12148/btv1b52513422x/f496.item>.

²⁶⁶ Paris, Bibliothèque Nationale de France, Français 14969, f. 17r, <https://gallica.bnf.fr/ark:/12148/btv1b10020145j/f39.item>.

wheat in his left hand. Beneath his left arm is a blue horse. The text that this image accompanies describes the story of gold-digging ants filling the pack-saddles on the horses with gold after which the horses return to their owners with the gold-laden packs.²⁶⁷ This illustration uniquely combines the iconographic element of a camel being attacked by ants, representative of gold-digging ants, with the iconographic element of insect-like ants coming out of a crop of wheat, which is often seen in illustrations of the insect version of ants.

The last two images of gold-digging ants are portrait images that appear on two *mappae mundi* – the Ebstorf Map and the Hereford Map. *Mappae mundi*, like that of bestiaries, incorporated multiple aspects of medieval intellectual history into one source. The Ebstorf Map and the Hereford Map, both created around the beginning of the fourteenth century,²⁶⁸ combine bestiary imagery with geography and pictorial representations of biblical stories to provide a map that represents all the facets of the medieval world.²⁶⁹ The creators of these maps incorporated information from many of the same classical and medieval sources that bestiaries used, and therefore, two examples of gold-digging ants survive from these maps. The Ebstorf map shows a dog-like quadrupedal creature with grasshopper-like legs, located in the area of Mesopotamia (fig. 38),²⁷⁰ reminiscent of the description provided in *Wonders of the East*. The gold-digging ant is not colored in this image and there is only one creature that appears, which is different from other images of gold-digging ants, as well as from the illustrations of ants that were analyzed earlier in the chapter. This suggests that the purpose of this image, and its corresponding textual description (“Ants the size of dogs guard the golden sands.”²⁷¹) was to

²⁶⁷ Druce’s “An Account of the Murmekoleon or Ant-Lion,” 359.

²⁶⁸ The Hereford Map still survives intact, but the Ebstorf Map was destroyed in 1943 and only survives via reconstructions.

²⁶⁹ Debra Higgs Strickland, “The Bestiary on Medieval World Maps,” in *Book of Beasts: The Bestiary in the Medieval World*, ed. Elizabeth Morrison (Los Angeles: Getty Publications, 2019), 267.

²⁷⁰ “The Ebstorf Map,” Hyper Image, accessed February 13, 2022, https://warnke.web.leuphana.de/hyperimage/EbsKart/#V13_022/.

²⁷¹ *Formice canum magnitudine custodiunt aureas arenas.*

briefly explain where these creatures were located in the world and the image was a mnemonic device to help remember what the creatures were.

The Hereford Map also contains a portrait image of gold-digging ants, though these are located in Ethiopia rather than Mesopotamia, as on the Ebstorf Map. (fig. 39).²⁷² This image shows two ant-like creatures with triple-segmented bodies, six legs, and a dot for an eye facing each other. The image also shows something extending from the mouths of the ants descending towards the tiny round items the ants stand over, which most likely represents gold.²⁷³ The text that accompanies this image is similar to that of the Ebstorf Map: “Here enormous ants hoard golden sands.”²⁷⁴ The legend, according to Scott Westrem, was taken from Solinus rather than Pliny as these ants were placed in Ethiopia on this map.²⁷⁵ Again, the image of gold-digging ants here, along with the corresponding textual legend, was to orient these creatures within the medieval world rather than to emphasize specific positive or negative characteristics, like the images of ants in Latin bestiaries.

Images of gold-digging ants are less consistent between medieval sources than between the images of ants in Latin bestiaries. Though these images have the same main content – depicting gold-digging ants and their territorial nature – there was no overarching purpose between the sources to emphasize a specific value through these images. Ultimately, the content that was visually depicted in images of gold-digging ants was up to the artist of the manuscript or map, and each image had its own unique ties to its specific text. The images of ants in Latin bestiaries, therefore, could be said to have had less freedom in their designs as all of those images represent a good characteristic of behavior of ants visually. The difference in

²⁷² “Hereford Map (Hereford Cathedral),” eds. Cat Crossley, Heather Wacha, and Martin Foys, in *Virtual Mappa*, eds. Martin Foys, Heather Wacha et al. Schoenberg Institute of Manuscript Studies, 2020: <https://sims2.digitalmappa.org/36>, DOI: 10.21231/ef21-ev82.

²⁷³ Scott Westrem, *The Hereford Map* (Turnhout: Brepols, 2001), 366.

²⁷⁴ *Hic grandes formice auream sericam arenas.*

²⁷⁵ Westrem, *The Hereford Map*, 366.

the treatment of the illustrations of ants, gold-digging ants, and even ant-lions reflect the medieval understanding of each creature and their positive and negative associations, and these understandings are reflected in the use of these creatures in the chapter of ants in Latin bestiaries.

Conclusion

Ants have been undeservingly overlooked in studies of Latin bestiaries. Their chapter in these bestiaries included examples of good Christian behavior based on the three characteristics of ants described in said chapter. Some chapters even included two other versions of ants, that of ant-lions and gold-digging ants, whose violent traits contrasted with the good characteristics of the ant to provide negative exempla. Though, these negative exempla were not stated outright, the purpose of ant-lions and gold-digging ants within these chapters was understood because of the collective perception of these ants created by both classical and medieval authors. The intertextuality between the bestiary descriptions of these three ants and their descriptions in various classical and medieval works relating to geographical, encyclopedic, and natural historical text shaped the meaning and understanding of the characteristics of each ant – that of the hardworking and diligent ant that preps food for the winter so it does not die, the violent dual-nature of the ant-lion, and the similarly violent and similarly hard-working gold-digging ant. Through analysis of forty-one Latin bestiaries, the use of gold-digging ants and ant-lions as negative exempla can be seen, as the consistency in the layout of the chapters and in the accompanying iconography aided in the portrayal of their bestial and violent characteristics, contrasting that of the small and harmless, dutiful ant.

This study only incorporated Latin and Old English sources, and sources that were translated into English, due to limited training in Old French and Greek. Similarly, this study incorporated only a small fraction of classical sources where ants, ant-lions, and gold-digging ants were mentioned because of the time and space constraints of this thesis. The lack of accessibility to many Latin bestiaries, especially from the Third and Fourth Family, was also a limiting factor for the analysis of these bestiaries.

Further research on ants, ant-lions, and gold-digging ants could go in numerous directions. Ideally, such research would incorporate analysis of versions of the *Physiologus* written in languages other than Latin, as well as vernacular bestiaries. Again, more research into other classical and medieval sources that mention ants, ant-lions, and gold-digging ants will be necessary. A lot of the stories of gold-digging ants, in particular, incorporate new information seemingly out of thin air and it would be interesting to see if there are other sources that also contain these same or even other details. Of course, another direction of research would also be looking at how high medieval and renaissance sources understood and dealt with the moralizing characteristics of these ants. Further research could also include a comparative analysis of chapters of ants in all surviving Latin bestiaries, not only those accessible online. Thus, this thesis could offer some new aspects with regard to the topic; however, still much work will have to be done to understand the role and meanings of the variety of ants for different members of medieval society.

Appendix A: Table of Bestiaries

The following table provides the classification, approximate date of production, location of production (if known), and the illustration information for each bestiary analyzed in this thesis.

<i>Bestiary</i>	<i>Classification</i>	<i>Approx. Date of Production</i>	<i>Location of Production</i>	<i>Illustrated</i> ²⁷⁶
<i>Biblioteca Apostolica Vaticana, Pal lat. 1074</i>	First Family, B-Is	10 th -11 th century	France?	No
<i>British Library, Stowe MS 1067</i>	First Family, B-Is	Early 12 th century	England	Not completed ²⁷⁷
<i>Corpus Christi College, MS 22</i>	First Family, B-Is	12 th century	England	Yes
<i>Bayerische Staatsbibliothek, Clm 536</i>	<i>Dicta Chrysostomi</i>	1143-1147	?	No
<i>Pierpont Morgan Library, MS M 832</i>	<i>Dicta Chrysostomi</i>	1150	Austria	Yes
<i>Bibliothèque Multimédia Intercommunale d'Epinal, MS 209</i>	<i>Dicta Chrysostomi</i>	1150-1250	?	Yes
<i>British Library, Additional MS 11283</i>	Second Family	1170	England	Yes
<i>Pierpont Morgan Library, MS M 81</i>	First Family, Transitional	1185	England	Yes
<i>Bibliothèque Nationale de France, Nouv. Acq. Lat. 873</i>	First Family, B-Is	Late 12 th century	Canterbury, England	No
<i>Oberösterreichische Landesbibliothek, Hs.-33</i>	<i>Dicta Chrysostomi</i>	12 th – 13 th century	?	No
<i>Aberdeen University Library, MS 24</i>	Second Family	1200	England	Yes
<i>British Library, Royal MS 12 C XIX</i>	First Family, Transitional	1200-1210	Durham, England	Yes
<i>Cambridge University Library, MS Ii.4.26</i>	Second Family	1200-1210	England	Partially

²⁷⁶ N.B. Illustrated refers specifically to whether or not the chapter on ants in the bestiary is illustrated, not in regards to the whole bestiary. For example, British Library, Royal MS 12 F XIII is an illuminated bestiary, but the chapter on ants was not illustrated.

²⁷⁷ N.B. Not Completed means that there is space in the chapter on ants for an illustration, but it was never done.

<i>Bodleian Library, MS Ashmole 1511</i>	Second Family	Early 13 th century	England	Yes
<i>Universitätsbibliothek Leipzig, Ms 351</i>	<i>Dicta Chrysostomi</i>	Early 13 th century	?	No
<i>Cambridge University Library, MS Kk.4.25</i>	Third Family	1220-40	England	Yes
<i>Bodleian Library, MS Bodley 764</i>	Second Family	1225-1250	England	Yes
<i>British Library, Royal MS 12 F XIII</i>	Second Family	1230	England	No
<i>British Library, Harley MS 4751</i>	Second Family	1230-1240	England	Yes
<i>British Library, Harley MS 3244</i>	Second Family	1236-1250	England	Yes
<i>Bibliothèque Municipale de Valenciennes, MS 101</i>	First Family, H	1240	France	Yes
<i>Bibliothèque Nationale de France, Lat. 14429</i>	First Family, H	1250-1260	Northern France	Yes
<i>Bibliothèque Nationale de France, Lat. 3630</i>	Second Family	Mid 13 th century	England	Yes
<i>Getty Museum, MS 100</i>	First Family, Transitional	Mid 13 th century	England	Yes
<i>British Library, Sloane MS 278</i>	<i>Dicta Chrysostomi</i>	1280-1300	Northern France	Yes
<i>Bayerische Staatsbibliothek, Clm 14348</i>	<i>Dicta Chrysostomi</i>	13 th century	?	No
<i>Biblioteca Apostolica Vaticana, Reg. Lat. 258</i>	Second Family	13 th century	?	Yes
<i>Bibliothèque Municipale de Le Mans, MS 84</i>	Second Family	13 th century	?	No
<i>Bibliothèque Nationale de France, Lat. 6838B</i>	Second Family	13 th century	Northern France	Yes
<i>Bibliothèque Nationale de France, Lat. 10448</i>	<i>Dicta Chrysostomi</i>	13 th century	Germany/Bavaria	Not completed
<i>Bibliothèque Nationale de France, Lat. 11207</i>	Second Family	13 th century	Northern France	Yes
<i>Österreichische Nationalbibliothek, Cod. 13378</i>	<i>Dicta Chrysostomi</i>	13 th century	?	No
<i>Bayerische Staatsbibliothek, Clm 2655</i>	<i>Dicta Chrysostomi</i>	Late 13 th century	?	Yes
<i>Bayerische Staatsbibliothek, Gall. 16</i>	First Family, Transitional	1303-1308	York, England	Yes
<i>Corpus Christi College, MS 53</i>	Second Family	1304-1321	England	Yes
<i>British Library, Royal MS 2 B VII</i>	First Family, Transitional	1310-1320	England	Yes
<i>Pierpont Morgan Library, MS M 890</i>	Second Family	1325-1350	England	Yes
<i>Bayerische Staatsbibliothek, Clm 6908</i>	<i>Dicta Chrysostomi</i>	14 th century	?	Yes

<i>Universitätsbibliothek Leipzig, Ms 1305</i>	<i>Dicta Chrysostomi</i>	Early-mid 15 th century	?	No
<i>Bayerische Staatsbibliothek, Clm 14216</i>	<i>Dicta Chrysostomi</i>	15 th century	?	No
<i>Koninklijke Bibliotek, Gl. Kgl. 1633-4</i>	Second Family	15 th century	England	Yes

Appendix B: Figures



Figure 1 - Paris, Bibliothèque Nationale de France, Lat. 6838B, fols. 19r.



Figure 2 - Épinal, Bibliothèque Multimédia Intercommunale d'Epinal, MS 209, fol. 73v.



Figure 3 - Paris, Bibliothèque Nationale de France, Lat. 11207, fol. 17r.



Figure 4 - Valenciennes, Bibliothèque Municipale de Valenciennes, MS 101, fol. 197v.

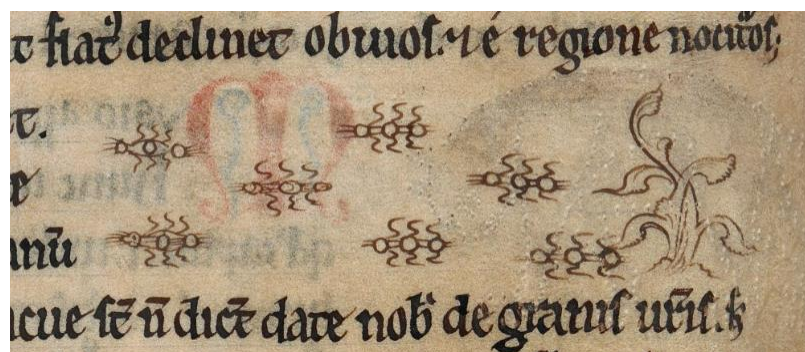


Figure 5 - London, British Library, Additional MS 11283, fols. 15v-16r.



Figure 6 - New York, Pierpont Morgan Library, MS M 890, fol. 8v.



Figure 7 - Munich, Bayerische Staatsbibliothek, Gall. 16, fol. 26r.



Figure 8 - Aberdeen, Aberdeen University Library, MS 24, fol. 24v.



Figure 9 - Oxford, Bodleian Library, MS Ashmole 1511, fol. 36v.



Figure 10 - Cambridge, Corpus Christi College MS 53, fol. 189r.



Figure 11 - Copenhagen, Koninklijke Bibliotek, Gl. Kgl. 1633-4, fol. 29v.

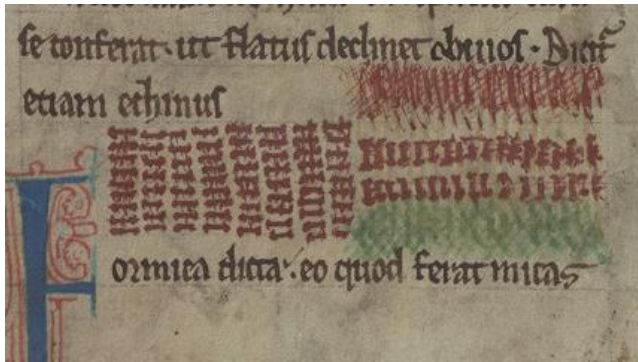


Figure 12 - Cambridge, Cambridge University Library, MS Kk.4.25, fol. 75v.



Figure 13 - London, British Library, Sloane MS 278, fol. 54v.



Figure 14 - Cambridge, Corpus Christi College, MS 22, fol. 167r.



Figure 15 - New York, Pierpont Morgan Library, MS M 832, fol. 7v.



Figure 16 - London, British Library, Harley MS 3244, fol. 50r.



Figure 17 - Paris, Bibliothèque Nationale de France, Lat. 3630, fol. 85r.

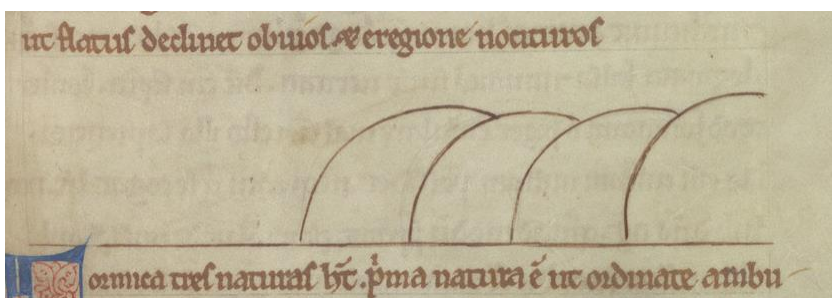


Figure 18 - Cambridge, Cambridge University Library, MS li.4.26, fol. 29r.



Figure 19 - London, British Library, Harley MS 4751, fol. 32r.



Figure 20 - Oxford, Bodleian Library, MS Bodley 764, fol. 53v.



Figure 21 - Paris, Bibliothèque Nationale de France, Lat. 14429, fol. 116v.

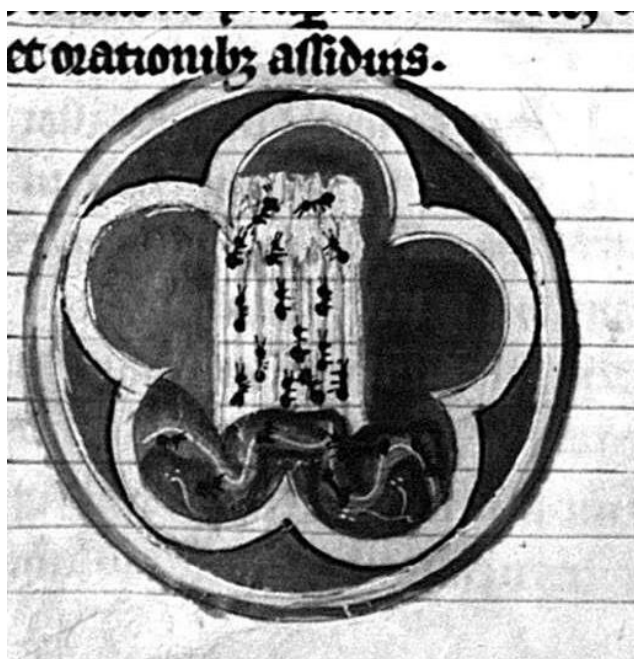


Figure 22 - Munich, Bayerische Staatsbibliothek, Clm 2655, fol. 100v.



Figure 23 - Munich, Bayerische Staatsbibliothek, Clm 6908, fol. 82v.

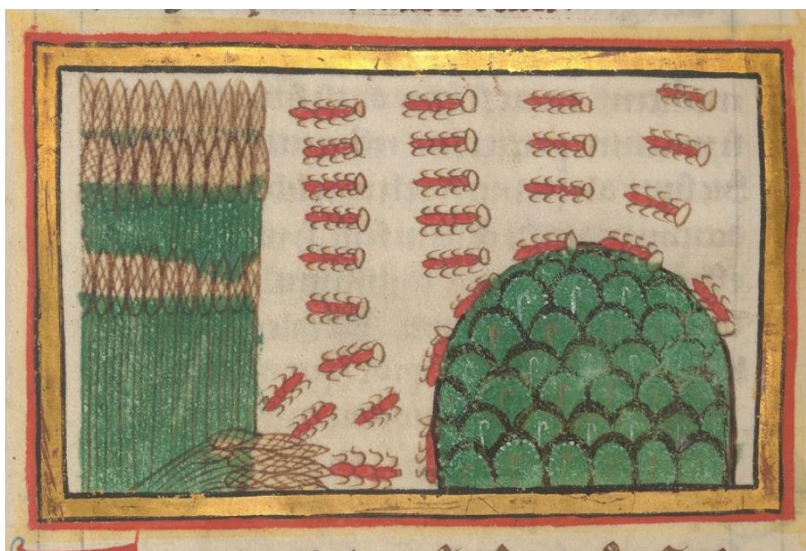


Figure 24 - New York, Pierpont Morgan Library, MS M 81, fol. 31v.



Figure 25 - London, British Library, Royal MS 12 C XIX, fol. 24v.

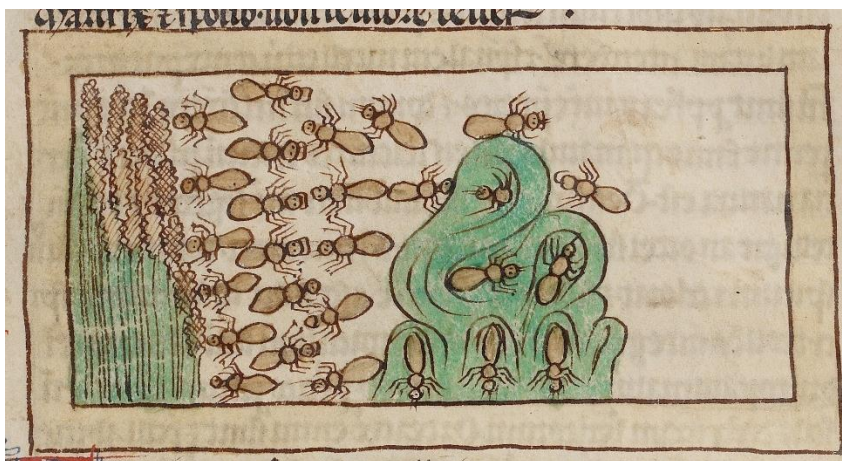


Figure 26 - Los Angeles, Getty Museum, MS 100, fol. 23r.



Figure 27 - Cambridge, Cambridge University Library, MS Kk.4.25, fol. 75v.



Figure 28 - Leipzig, Universitätsbibliothek Leipzig, Cod. gr. 35, fol. 34r.

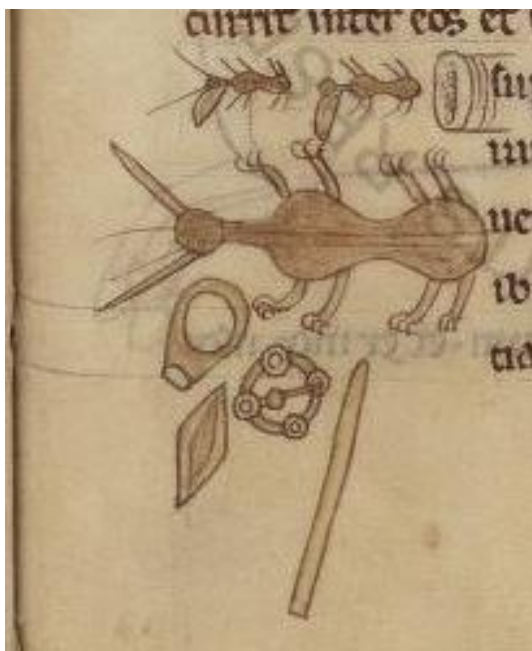


Figure 29 - Vatican, Biblioteca Apostolica Vaticana, Reg. Lat. 258, fol. 22v.



Figure 30 - British Library, Royal MS 2 B VII, fol. 95v.



Figure 31 - British Library, Royal MS 2 B VII, fol. 96r.



Figure 32 - London, British Library, Cotton MS Vitellius A XV, fol. 101r.



Figure 33 - London, British Library, Cotton MS Tiberius B V/1, fol. 80v.



Figure 34 - Oxford, Bodleian Library, MS Bodley 614, fol. 39r.



Figure 35 - Oxford, Bodleian Library, MS Bodley 614, fol. 39v.



Figure 36 - Paris, Bibliothèque Nationale de France, Français 1444, fol. 245r.



Figure 37 - Paris, Bibliothèque Nationale de France, Français 14969, fol. 17r.



Figure 38 - The Ebstorf Map.

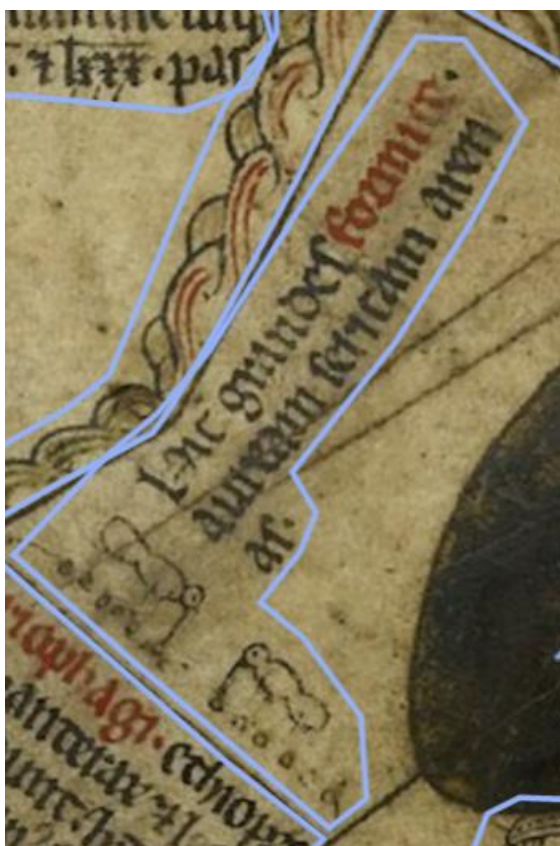


Figure 39 - The Hereford Map.

Appendix C: Extracts of Texts

n.b. In this appendix, I include whole sections of text that I used in my first chapter in chronological order, as well as the original Latin text where possible. When the sections or chapters were too long, I only included part of the text.

Herodotus (5th century BCE), Histories, 3.102-5²⁷⁸

102. Other Indians dwell near the town of Caspatyrus and the Pactyic country,¹ northward of the rest of India; these live like the Bactrians; they are of all Indians the most warlike, and it is they who are charged with the getting of the gold; for in these parts all is desert by reason of the sand. There are found in this sandy desert ants not so big as dogs but bigger than foxes; the Persian king has some of these, which have been caught there. These ants make their dwellings underground, digging out the sand in the same manner as do the ants in Greece, to which they are very like in shape, and the sand which they carry forth from the holes is full of gold. It is for this sand that the Indians set forth into the desert. They harness three camels apiece, a male led camel on either side to help in draught, and a female in the middle: the man himself rides on the female, careful that when harnessed she has been taken away from as young an offspring as may be. Their camels are as swift as horses, and much better able to bear burdens besides.

103. I do not describe the camel's appearance to Greeks, for they know it; but I will show them a thing which they do not know concerning it: the hindlegs of the camel have four thighbones and four knee-joints; its privy parts are turned towards the tail between the hindlegs.

104. Thus and with teams so harnessed the Indians ride after the gold, using all diligence that they shall be about the business of taking it when the heat is greatest; for the ants are then out of sight underground. Now in these parts the sun is hottest in the morning, not at midday as elsewhere, but from sunrise to the hour of market-closing. Through these hours it is hotter by much than in Hellas at noon, so that men are said to sprinkle themselves with water at this time. At midday the sun's heat is well nigh the same in India and elsewhere. As it grows to afternoon, the sun of India has the power of the morning sun in other lands; with its sinking the day becomes ever cooler, till at sunset it is exceeding cold.

105. So when the Indians come to the place with their sacks, they fill these with the sand and ride away back with all speed; for, as the Persians say, the ants forthwith scent them out and give chase, being, it would seem, so much swifter than all other creatures that if the Indians made not haste on their way while the ants are mustering, not one of them would escape. So they loose the male trace-camels as they begin to lag, one at a time (these being slower than the females); the mares never tire, for they remember the young that they have left. Such is the tale. Most of the gold (say the Persians) is got in this way by the Indians; there is some besides that they dig from mines in their country, but it is less abundant.

²⁷⁸ Herodotus, *The Persian Wars, Volume II: Books 3-4*, trans. A. D. Godley, Loeb Classical Library 118, (Cambridge, MA: Harvard University Press, 1921), 129-33.

XXXVI. “Fiunt certae divinationum coniecturae a peritis. Midas illi Phrygi, cum puer esset, dormienti formicae in os tritici grana congesserunt. Divitissimum fore praedictum est; quod evenit. At Platoni cum in cunis parvulo dormienti apes in labellis consedisent, responsum est singulari illum suavitate orationis fore. Ita futura eloquentia provisa in infante est. Quid? amores ac deliciae tuae, Roscius, num aut ipse aut pro eo Lanuvium totum mentiebatur? Qui cum esset in cunabulis educareturque in Solonio, qui est campus agri Lanuvini, noctu lumine apposito experrecta nutrix animadvertit puerum dormientem circumplicatum serpentis amplexu. Quo aspectu exterrita clamorem sustulit. Pater autem Rosci ad haruspices rettulit, qui responderunt nihil illo puero clarius, nihil nobilius fore. Atque hanc speciem Pasiteles caelavit argento et noster expressit Archias versibus....

XXXVI. “Trustworthy conjectures in divining are made by experts. For instance, when Midas, the famous king of Phrygia, was a child, ants filled his mouth with grains of wheat as he slept. It was predicted that he would be a very wealthy man; and so it turned out. Again, while Plato was an infant, asleep in his cradle, bees settled on his lips and this was interpreted to mean that he would have a rare sweetness of speech. Hence in his infancy his future eloquence was foreseen. And what about your beloved and charming friend Roscius? Did he lie or did the whole of Lanuvium lie for him in telling the following incident : In his cradle days, while he was being reared in Solonium, a plain in the Lanuvian district, his nurse suddenly awoke during the night and by the light of a lamp observed the child asleep with a snake coiled about him. She was greatly frightened at the sight and gave an alarm. His father referred the occurrence to the soothsayers, who replied that the boy would attain unrivalled eminence and glory. Indeed, Pasiteles has engraved the scene in silver and our friend Archias has described it in verse....

²⁷⁹ Cicero, *On Old Age. On Friendship. On Divination*, trans. W. A. Falconer, Loeb Classical Library 154, (Cambridge, MA: Harvard University Press, 1923), 308-11.

XIX. “Pertinere autem ad rem arbitrantur intellegi natura fieri ut liberi a parentibus amentur; a quo initio profectam communem humani generis societatem persequimur. Quod primum intellegi debet figura membrisque corporum, quae ipsa declarant, procreandi a natura habitam esse rationem. Neque vero haec inter se congruere possent ut natura et procreari vellet et diligere procreatos non curaret. Atque etiam in bestiis vis naturae perspicui potest; quarum in fetu et in educatione laborem cum cernimus, naturae ipsius vocem videmur audire. Quare ut perspicuum est natura nos a dolore abhorrere, sic apparet a natura ipsa ut eos quos genuerimus amemus impelli. Ex hoc nascitur ut etiam communis hominum inter homines naturalis sit commendatio, ut oporteat hominem ab homine ob id ipsum quod homo sit non alienum videri. Ut enim in membris alia sunt tamquam sibi nata, ut oculi, ut aures, alia etiam ceterorum membrorum usum adiuvant, ut crura, ut manus, sic immanes quaedam bestiae sibi solum natae sunt, at illa quae in concha patula pina dicitur, isque qui enat e concha, qui quod eam custodit pinoteres vocatur, in eandemque cum se recepit includitur, ut videatur monuisse ut caveret, itemque formicae, apes, ciconiae aliorum etiam causa quaedam faciunt. Multo haec coniunctius homines. Itaque natura sumus apti ad coetus, concilia, civitates.

XIX. “Again, it is held by the Stoics to be important to understand that nature creates in parents an affection for their children; and parental affection is the source to which we trace the origin of the association of the human race in communities. This cannot but be clear in the first place from the conformation of the body and its members, which by themselves are enough to show that nature’s scheme included the procreation of offspring. Yet it could not be consistent that nature should at once intend offspring to be born and make no provision for that offspring when born to be loved and cherished. Even in the lower animals nature’s operation can be clearly discerned; when we observe the labour that they spend on bearing and rearing their young, we seem to be listening to the actual voice of nature. Hence as it is manifest that it is natural for us to shrink from pain, so it is clear that we derive from nature herself the impulse to love those to whom we have given birth. From this impulse is developed the sense of mutual attraction which unites human beings as such; this also is bestowed by nature. The mere fact of their common humanity requires that one man should feel another man to be akin to him. For just as some of the parts of the body, such as the eyes and the ears, are created as it were for their own sakes, while others like the legs or the hands also subserve the utility of the rest of the members, so some very large animals are born for themselves alone; whereas the sea-pen, as it is called, in its roomy shell, and the creature named the ‘pinoteres’ because it keeps watch over the sea-pen, which swims out of the sea-pen’s shell, then retires back into it and is shut up inside, thus appearing to have warned its host to be on its guard—these creatures, and also the ant, the bee, the stork, do certain actions for the sake of others besides themselves. With human beings this bond of mutual aid is far more intimate. It

²⁸⁰ Cicero, *On Ends*, trans. H. Rackham, Loeb Classical Library 40, (Cambridge, MA: Harvard University Press, 1914), 280-5.

follows that we are by nature fitted to form unions, societies and states.

Virgil (70 – 19 BCE), *Georgics*, 1.186²⁸¹

Possum multa tibi veterum praecepta referre,
ni refugis tenuisque piget cognoscere curas.
area cum primis ingenti aequanda cylindro
et vertenda manu et creta solidanda tenaci,
ne subeant herbae neu pulvere victa fatiscat,
tum variae inludant pestes: saepe exiguus
mus sub terris posuitque domos atque horrea
fecit, aut oculis capti fodere cubilia talpae,
inventusque cavis bufo et quae plurima terrae
monstra ferunt, populatque ingentem farris
acervum curculio atque inopi metuens
formica senectae.

I can repeat for you many olden maxims,
unless you shrink back and are loath to learn
such trivial cares. And chiefly, the threshing
floor must be levelled with a heavy roller,
kneaded with the hand, and made solid with
binding clay, lest weeds spring up, or,
crumbling into dust, it gape open, and then
divers plagues make mock of you. Often
under the ground the tiny mouse sets up a
home and builds his storehouses, or sightless
moles dig out chambers; in holes may be
found the toad, and all the countless pests
born of the earth; or the weevil ravages a
huge heap of grain, or the ant, fearful of a
destitute old age.

Horace (65 – 8 BCE), *Satires*, 1.1.23-49²⁸²

Praeterea, ne sic, ut qui iocularia, ridens
percurram: quamquam ridentem dicere
verum quid vetat? ut pueris olim dant
crustula blandi doctores, elementa velint ut
discere prima: sed tamen amoto quaeramus
seria ludo: ille gravem duro terram qui vertit
aratro, perfidus hic caupo, miles nautaeque
per omne audaces mare qui currunt, hac
mente laborem sese ferre, senes ut in otia tuta
recedant, aiunt, cum sibi sint congesta
cibaria: sicut parvola, nam exemplo est,
magni formica laboris ore trahit quodcumque
potest atque addit acervo quem struit, haud
ignara ac non incauta futuri. quae, simul
inversum contristat Aquarius annum, non

Furthermore, not to skim over the subject
with a laugh like a writer of witticisms—and
yet what is to prevent one from telling truth
as he laughs, even as teachers sometimes
give cookies to children to coax them into
learning their A B C?—still, putting jesting
aside, let us turn to serious thoughts: yon
farmer, who with tough plough turns up the
heavy soil, our rascally host here, the soldier,
the sailors who boldly scour every sea, all say
that they bear toil with this in view, that when
old they may retire into secure ease, once
they have piled up their provisions; even as
the tiny, hard-working ant (for she is their
model) drags all she can with her mouth, and

²⁸¹ Virgil, *Eclogues. Georgics. Aeneid: Books 1-6*, trans. H. Rushton Fairclough, revised by G. P. Goold, Loeb Classical Library 63, (Cambridge, MA: Harvard University Press, 1916), 110-1.

²⁸² Horace, *Satires. Epistles. The Art of Poetry*, trans. H. Rushton Fairclough, Loeb Classical Library 194, (Cambridge, MA: Harvard University Press, 1926), 6-9.

usquam prorepat et illis utitur ante quaesitis sapiens,³ cum te neque fervidus aestus demoveat lucro neque hiems, ignis, mare, ferrum, nil obstat tibi, dum ne sit te ditior alter.

Quid iuvat immensum te argenti pondus et auri furtim defossa timidum deponere terra? “quod si comminuas, vilem redigatur ad assem.” at ni id fit, quid habet pulchri constructus acervus? milia frumenti tua triverit area centum, non tuus hoc capiet venter plus ac meus; ut si reticulum panis venalis inter onusto forte vehas umero, nihilo plus accipias quam qui nil portarit.

adds it to the heap she is building, because she is not unaware and not heedless of the morrow. Yet she, soon as Aquarius saddens the upturned year, stirs out no more but uses the store she gathered beforehand, wise creature that she is; while as for you, neither burning heat, nor winter, fire, sea, sword, can turn you aside from gain—nothing stops you, until no second man be richer than yourself.

What good to you is a vast weight of silver and gold, if in terror you stealthily bury it in a hole in the ground? “But if one splits it up, it would dwindle to a paltry penny.” Yet if that is not done, what beauty has the piled-up heap? Suppose your threshing-floor has threshed out a hundred thousand bushels of grain; your stomach will not on that account hold more than mine: ’tis as if in the slave-gang you by chance should carry the heavy bread-bag on your shoulder, yet you would receive no more than the slave who carries nothing.

Strabo (64/3 BCE – c. 24 CE), *Geographica*, 15.1.44²⁸³

44. Nearchus says that the skins of gold-mining ants are like those of leopards. But Megasthenes speaks of these ants as follows: that among the Derdae, a large tribe of Indians living towards the east and in the mountains, there is a plateau approximately three thousand stadia in circuit, and that below it are gold mines, of which the miners are ants, animals that are no smaller than foxes, are surpassingly swift, and live on the prey they catch. They dig holes in winter and heap up the earth at the mouths of the holes, like moles; and the gold-dust requires but little smelting. The neighbouring peoples go after it on beasts of burden by stealth, for if they go openly the ants fight it out with them and pursue them when they flee, and then, having overtaken them, exterminate both them and their beasts; but to escape being seen by the ants, the people lay out pieces of flesh of wild beasts at different places, and when the ants are drawn away from around the holes, the people take up the gold-dust and, not knowing how to smelt it, dispose of it unwrought to traders at any price it will fetch.

²⁸³ Strabo, *Geography*, Volume VII: Books 15-16, trans. Horace Leonard Jones, Loeb Classical Library 241, (Cambridge, MA: Harvard University Press, 1930), 75-7.

Ovid (43 BCE – 17/18 CE), *Tristia*, 1.9.9-10²⁸⁴

horrea formicae tendunt ad inania numquam:
nullus ad amissas ibit amicus opes.

Ants seek a granary, but an empty one never:
no friend will approach when wealth is lost.

Valerius Maximus (1st century CE), *Factorum ac Dictorum Memorabilium*, 1.6²⁸⁵

Midae vero, cuius imperio Phrygia fuit
subiecta, puero dormienti formicae in os
grana tritici congesserunt. parentibus deinde
eius quorsus prodigium tenderet
explorantibus augures responderunt omnium
illum mortalium futurum ditissimum. nec
vana praedictio exstitit: nam Midas
cunctorum paene regum opes abundantia
pecuniae antecessit, infantiaeque incunabula
vili⁸¹ deorum munere donata onustis auro
atque argento gazis pensavit.

Phrygia was under the rule of Midas.²⁴
When he was a boy, ants put grains of wheat
into his mouth as he slept. When his parents
enquired to what the prodigy tended, the
Augurs responded that he would be the
richest of all mankind. Nor did their
prophecy prove idle, for Midas excelled the
wealth of almost all kings in the abundance
of his money and balanced the cradle of his
infancy, dowered by the cheap gift of the
gods, with treasures laden with gold and
silver.

Formicis Midae iure meritoque apes Platonis
praetulerim: illae enim caducae ac fragilis,
hae solidae et aeternae felicitatis indices
exstiterunt, dormientis in cunis parvuli
labellis mel inserendo. qua re audita
prodigiorum interpretes singularem eloquii
suavitatem ore eius emanaturam dixerunt. ac
mihi quidem illae apes non montem
Hymettium thymi flore redolentem, sed
Musarum Heliconios colles omni genere
doctrinae virentes dearum instinctu depastae
maximo ingenio dulcissima summae
eloquentiae instillasse videntur alimenta.

With good and sufficient reason would I
prefer the bees of Plato to Midas' ants. The
latter foretold of transitory, fragile felicity,
the former of solid and eternal, by putting
honey between the lips of the little lad as he
slept in his cradle. Hearing of it, the
interpreters of prodigies said that matchless
sweetness of discourse would flow from his
mouth. And to my thinking those bees at the
prompting of the goddesses, fed, not upon
Mount Hymettus, fragrant with flowers of
thyme, but on the Heliconian hills of the
Muses, verdant with every kind of learning,
and instilled sweetest nurture of supreme
eloquence into that mighty intellect.

²⁸⁴ Ovid, *Tristia. Ex Ponto*, trans. A. L. Wheeler, revised by G. P. Goold, Loeb Classical Library 151, (Cambridge, MA: Harvard University Press, 1924), 44-5.

²⁸⁵ Valerius Maximus, *Memorable Doings and Sayings, Volume I: Books 1-5.*, ed. and trans. D. R. Shackleton Bailey, Loeb Classical Library 492, (Cambridge, MA: Harvard University Press, 2000), 79-81.

XXXVI. Plurima insectorum vermiculum gignunt; nam et formicae similem ovis vere, et hae communicantes laborem ut apes, sed illae faciunt cibos, hae condunt. ac si quis conparet onera corporibus earum, fateatur nullis portione vires esse maiores. gerunt ea morsu; maiora aversae postremis pedibus moliuntur umeris obnixae. et his reipublicae ratio, memoria, cura. semina adrosa condunt ne rursus in frugem exeant e terra, maiora ad introitum dividunt, madefacta imbre proferunt atque siccant. operantur et noctu plena luna, eadem interlunio cessant. iam in opere qui labor, quae sedulitas! et quoniam ex diverso convehunt altera alterius ignarae certi dies ad recognitionem mutuam nundinis dantur. quae tunc earum concursatio, quam diligens cum obviis quaedam conlocutio atque percontatio! silices itinere earum adtritros videmus et opere semitam factam, ne quis dubitet et qualibet in re quid possit quantulacumque assiduitas! sepeliunt inter se viventium solae praeter hominem.—non sunt in Sicilia pinnatae.

Indicae formicae cornua Erythris in aede Herculis fixa miraculo fuere. aurum hae cavernis egerunt cum terra, in regione septentrionalium Indorum qui Dardae vocantur. ipsis color felium, magnitudo Aegypti luporum. erutum hoc ab iis tempore hiberno Indi furantur aestivo fervore, conditis propter vaporem in cuniculos formicis, quae tamen odore sollicitatae provolant crebroque lacerant quamvis praevelocibus camelis fugientes: tanta pernicitas feritasque est cum amore auri.

XXXVI. Most of the insects give birth to a maggot; ants for example produce in spring one that resembles an egg, these too sharing their labour as do bees, but bees make the food stuffs, whereas ants collect theirs. And if anybody compared the loads that ants carry with the size of their bodies, he would confess that no creatures have proportionally greater strength; they carry them held in their mouths, but they move larger loads with their hind feet, turning their backs to them and heaving against them with their shoulders. Ants also have a system of government, and possess memory and diligence. They nibble their seeds before they store them away, so that they may not sprout up again out of the earth and germinate; they divide the larger seeds so as to get them in; when they have been wetted by rain they bring them out and dry them. They even work at night when there is a full moon, although when there is no moon they stop. Again what industry and what diligence is displayed in their work! and since they bring their burdens together from opposite directions, and are unknown to one another, certain days are assigned for market so that they may become acquainted. How they flock together on these occasions! How busily they converse, so to speak, with those they meet and press them with questions! We see rocks worn by their passage and a path made by their labours, so that nobody may doubt how much can be accomplished in any matter by even a trifling amount of assiduity! They are the only living creatures beside man that bury their dead.—Winged ants do not occur in Sicily.

The horns of an Indian ant fixed up in the Temple of Hercules were one of the sights of Erythrae. These ants carry gold out of caves in the earth in the region of the Northern Indians called the Dardae. The creatures are of the colour of cats and the size of Egyptian wolves. The gold that they dig

²⁸⁶ Pliny, *Natural History*, Volume III: Books 8-11, trans. H. Rackham, Loeb Classical Library 353 (Cambridge, MA: Harvard University Press, 1940), 498-9.

up in winter time the Indians steal in the hot weather of summer, when the heat makes the ants hide in burrows; but nevertheless they are attracted by their scent and fly out and sting them repeatedly although retreating on very fast camels: such speed and such ferocity do these creatures combine with their love of gold.

Quintilian (35 – 100 CE), *Institutio Oratoria*, 5.11²⁸⁷

ut, si animum dicas excolendum, similitudine utaris terrae, quae neglecta sentes ac dumos, culta fructus creat: aut, si ad curam rei publicae hortaris, ostendas apes etiam formicasque, non modo muta sed etiam parva animalia, in commune tamen laborare.

For example, if you are talking about the cultivation of the mind, you can use the image of the earth, which produces thorns and thickets if it is neglected, and fruits if it is cultivated. Or again, if you were encouraging someone to take up public service, you could show that bees and ants, which are not only dumb animals but are very tiny, nevertheless work together in common.

Phaedrus (1st century), *Fables*, 4.25²⁸⁸

25

Formica et Mvsca

[Nihil agere quod non prosit fabella indicat.]

Formica et musca contendebant acriter,
quae pluris esset. musca sic coepit prior:
“Conferre nostris tu potes te laudibus?
moror inter aras, templa perlustro deum;
ubi immolatur, exta praegusto omnia;
in capite regis sedeo cum visum est mihi,
et matronarum casta delibo oscula;
laboro nihil atque optimis rebus fruor.
Iquid horum simile tibi contingit, rustica?”
“Est gloriosus sane convictus deum,
sed illi qui invitatur, non qui invisus est.
aras frequentas? nempe abigeris quom venis.
reges commemoras et matronarum oscula?

25

The Ant and the Fly

[The fable warns us not to do anything in which there is no profit.]

An ant and a fly were disputing vigorously with each other which was the more important. The fly was the first to begin; said he: “How can you possibly compare your distinctions with mine? I loiter among the altars; I wander through all the temples of the gods; when a sacrifice is made I taste all the entrails before anyone else; I sit on the king’s head whenever I please, and I sip the pure kisses of married dames; I toil not, yet I reap the best of everything. What falls to your lot, rustic, that bears any likeness to these

²⁸⁷ Quintilian, *The Orator's Education, Volume II: Books 3-5*, ed. and trans. Donald A. Russell, Loeb Classical Library 125, (Cambridge, MA: Harvard University Press, 2002), 444-5.

²⁸⁸ Phaedrus, *Fables*, trans. Ben Edwin Perry, Loeb Classical Library 436, (Cambridge, MA: Harvard University Press, 1965), 340-2.

super etiam iactas tegere quod debet pudor.
 nihil laboras? ideo, cum opus est, nihil habes.
 ego grana in hiemem cum studiose congero,
 te circa murum pasci video stercore;
 mori contractam cum te cogunt frigora,
 me copiosa recipit incolumem domus.
 aestate me lacescis; cum bruma est siles.
 satis profecto rettudi superbiam.”
 Fabella talis hominum discernit notas,
 eorum qui se falsis ornant laudibus,
 et quorum virtus exhibet solidum decus.

things?” “Dining with the gods,” said the ant, “is certainly something to boast about, but only for one who is invited, not for one whom they detest. You frequent the altars, do you? But you are driven away, sure enough, as often as you come. And you make much of kings and the kisses of matrons? You even go so far as to boast of matters that a sense of shame is bound to conceal. You do no work? That’s why you don’t have anything when you need it. When I am busy storing up kernels of grain for the winter I see you along the walls feeding on dung; and when the cold causes you to shrivel up and die, my well-stored house gives me safe shelter. You challenge me in the summer; when it is winter you are silent. I’ve said enough, I’m sure, to deflate your pride.”

A fable of this kind distinguishes two brands of men, those who decorate themselves with illusory honours and those whose quality displays the charm of genuine worth.

Dio Chrysostom (c. 40 – c. 115 CE), *Oratio* 35.23-4²⁸⁹

It must be admitted that the people of India are more fortunate than you are, but that you are more fortunate than all others—with the exception of just one more race of mortals, namely, those most rich in gold. And their gold is obtained from ants. These ants are larger than foxes, though in other respects similar to the ants we have. And they burrow in the earth, just as do all other ants. And that which is thrown out by their burrowing is gold, the purest of all gold and the most resplendent. Now there are close to one another a series of what might be called hills of gold dust, and the whole plain is agleam. Therefore it is difficult to look thereon in the sunlight, and many of those who have made the attempt have lost their sight. But the people who live near that land, having traversed the intervening territory (desert land of no great extent) in chariots drawn by horses of greatest speed, arrive at midday, at which time the ants have gone underground; and then these men seize the gold that has been cast forth and flee. And the ants, becoming aware of what has happened, give chase, and, having overtaken their quarry, fight until they either meet their death or kill the foe—for they are the most valiant of all creatures.¹ And so these at any rate know what their gold is worth, and they even die sooner than give it up.

²⁸⁹ Dio Chrysostom, *Discourses* 31-36, trans. J. W. Cohoon, H. Lamar Crosby, Loeb Classical Library 358, (Cambridge, MA: Harvard University Press, 1940), 413-5.

Dio Chrysostom (c. 40 – c. 115 CE), Oratio 40.32²⁹⁰

So I have often reflected on the folly and the corruption of mankind, noting that men are spiritually inferior to the most despised and meanest creatures. For human beings often come to blows on meeting one another, and before they part they have exchanged abusive language; yet the ants, although they go about in such swarms, never bother one another, but quite amicably meet and pass and assist each other.

Juvenal (1st – 2nd century), Satire 6, 349-65²⁹¹

Iamque eadem summis pariter minimisque
libido, nec melior silicem pedibus quae
conterit atrum quam quae longorum vehitur
cervice Syrorum. ut spectet ludos, conducit
Ogulnia vestem, conducit comites, sellam,
cervical, amicas, nutricem et flavam cui det
mandata puellam. haec tamen argenti
superest quodcumque paterni levibus athleticis
et vasa novissima donat. multis res angusta
domi, sed nulla pudorem paupertatis habet
nec se metitur ad illam. [quem dedit haec
posuitque modum. tamen utile quid sit]
prospiciunt aliquando viri, frigusque
famemque formica tandem quidam expavere
magistra: prodiga non sentit pereuntem
femina censum. ac velut exhausta recidivus
pullulet arca nummus et e pleno tollatur
semper acervo, non umquam reputat quanti
sibi gaudia constant.

And these days the greatest and least of
women alike experience the same lust. The
woman who treads the black pavement with
her bare feet is no better than the woman
conveyed on the shoulders of tall Syrians. To
go watch the games, Ogulnia has to rent a
dress, rent attendants, a chair, a cushion,
some woman friends, a nurse, and a blonde
girl to give her orders to. Yet this same
woman gives away whatever's left of her
ancestral silver plate, down to the last vases,
to smooth-skinned athletes. Many women
are short of money, but none feels any of the
shame of poverty or matches herself to its
limits. Their husbands occasionally look to
the future, and some of them conceive a
terror of cold and hunger, learning the lesson
of the ant at long last. But a spend-spend-
spend woman has no awareness of her failing
resources. Just as if the coins were for ever
regenerating and sprouting up from the
exhausted treasure chest and taken from an
ever replenished heap, she gives never a
thought to the cost of her pleasures.

²⁹⁰ Dio Chrysostom, *Discourses 37-60*, trans. H. Lamar Crosby, Loeb Classical Library 376, (Cambridge, MA: Harvard University Press, 1946), 139.

²⁹¹ Juvenal, Persius, *Juvenal and Persius*, ed. and trans. Susanna Morton Braund, Loeb Classical Library 91, (Cambridge, MA: Harvard University Press, 2004), 268-71.

***Physiologus* (2nd -4th century), 14²⁹²**

n.b. Curley translates both version Y and version B of the *Physiologus*. Version Y is the main translation and he provides version B in square brackets if it is different from the text of Version Y.

Solomon said in Proverbs, “Go to the ant, O sluggard, and consider her ways” [Prov. 6:6]. *Physiologus* said that the ant has three natures. The first nature is this: ants walk in order, each one carrying a grain in his mouth. The ants who have nothing do not say to the others, “Give us your grain” [cf. Matt. 25:8], but they pass over the tracks of the others and reach a place where they find the grain; taking it up, they carry it off to their dwelling. This story is told about imprudent and unreasonable people. Woe to those virgins who beseeched the wise ones, saying, “Give us oil from your lamps, since ours are going out” [Matt. 25:8]. The others, however, heard them and being reasonable and intelligent said, “We cannot, for perhaps there will not be enough for us and for you” [Matt. 25:8].

[These things have been spoken about irrational animals and weak reptiles since they behave so prudently that none of them is foolish but all are found to be clever and wise. How much more ought those five rational virgins who were made foolish through their own negligence imitate the five wise ones and get oil for their own lamps from wherever those others got it. They ought not to have asked the wise ones through their own idleness and foolishness, saying, “Give us oil from your lamps” [Matt. 25:8]. O what empty foolishness! If they were not about to find oil on their own wherever the others found it, they should have imitated the ingeniousness of the ants. While the foolish virgins expected oil from others’ lamps, the Bridegroom came and they remained outside with extinguished lamps.]

The second nature of the ant is this: when it has hidden the grain in its dwelling, it separates it into two parts so that winter might not destroy it nor the flooding rains germinate it and the ant perish of hunger. And you, separate the words of the Old Testament, the carnal from the spiritual, lest the letter kill you when it germinates. [And you, man of God, divide the Old Testament scriptures into two parts, that is, according to the story and its spiritual meaning. Divide truth from fiction, separate the spiritual from the corporeal, transcend the killing letters toward the life-giving spirit, lest while the letter is germinating on a winter’s day (that is on the Day of Judgement) you die of hunger.] Paul the Apostle says, “The law is spiritual” [Rom. 7:14]. And later he says, “The letter kills, but the spirit gives life” [II Cor. 3:6]. And later, “Those things which give life are the two Testaments” [cf. Gal. 4:24]. The Jews, however, regarding the letter alone perished of hunger and became murderers of the prophets and of God, peeling the rods that the flocks might give birth [cf. Gen. 30:37f.], having carnal circumcision, sabbaths, and feasts of the tabernacles. But all of these are spiritual and intelligible things. [And you, O man of God, peel the rods and expose the white as Jacob did. Throw them into the water so that your flocks will bear clean and spiritual fruit and not produce carnal and corrupt offspring.]

The third nature of the ant is this: at harvest time, he goes into the fields, climbs up the ears, and bears away the grain. But, before climbing up the ears, the ant catches their scent from beneath and perceives from the scent whether it is wheat or barley. If it is barley, he immediately rushes off to the ear of wheat since barley is the food of brutes. And Job says,

²⁹² *Physiologus*, trans. Michael J. Curley (Chicago: University of Chicago Press, 1979), 20-3.

“Let barley come forth for me instead of wheat” [Job 31:40]. [Flee, O man of God, barley, that is the teachings of the heretics, for they are barley and harmful things fit to be cast among rocks. Heresies kill the souls of men. Flee Sabellius, Maricon, Manichaeus, avoid Novatianus, Montanus, Valentinus, Basilides, Macedonius, avoid Donatus and Photinus and all who come forth from the Arian brood like serpentine offspring from the womb of the dragon. The dogmas of these men are false and hostile to truth.] And the Prophet says, “Flee Babylon and flee from the land of the Caldeans” [Jer. 50:8], that is, flee alien teaching of alien glory; it is like barley-food, it kills the soul (for it is said to be and is an enemy of the truth). The story of the ant was wisely spoken.

***Physiologus*, 34²⁹³**

In Job, Eliphaz King of the Temanites says of the ant-lion, “He perished because he had no food” [Job 4:11]. His father has the face of a lion and eats flesh, while his mother has the face of an ant and feeds on plants. If she brings forth an ant-lion, it perishes because it has two natures, the face of a lion and the fore and rear parts of an ant. Because of the mother’s nature, it cannot feed on flesh nor can it eat plants because of the father’s nature. It perishes, therefore, because it has no food.

So it is with each person: “The man of deceitful heart is confused in all his ways” [Jas. 1:8]. It is not proper, therefore, to follow two paths, O man of double mind, even in prayer to be a sinner following two paths. It is written wisely, “Let it be with you *yes* or *no*” [Matt. 5:37].

***Aelian (c. 170 – c. 235), De Natura Animalium*, 2.25²⁹⁴**

In the summertime when the harvest is in and the corn is being threshed on the threshing-floor, Ants assemble in companies, going in single file or two abreast—indeed they sometimes go three abreast—after quitting their homes and customary shelters. Then they pick out some of the barley and the wheat and all follow the same track. And some go to collect the grain, others carry the load, and they get out of each other’s way with the utmost deference and consideration, especially those that are not laden for the benefit of those that are. Then they return to their dwellings and fill the pits in their store-chamber after boring through the middle of each grain. What falls out becomes the Ant’s meal at the time; what is left is infertile. This is a device on the part of these excellent and thrifty housekeepers to prevent the intact grain from putting out shoots and sprouting afresh when the rains have surrounded them, and to preserve themselves in that case from falling victims during the winter to want of food and to famine, and their zeal from being blunted. It is to Nature then that Ants too owe these and other fortunate gifts.

***Aelian, De Natura Animalium*, 3.4²⁹⁵**

4. The Ants of India which guard the gold will not cross the river Campylinus. And the Issedonians who inhabit the same country as the Ants . . . they are called, and so they are.

²⁹³ *Physiologus*, trans. Michael J. Curley (Chicago: University of Chicago Press, 1979), 49.

²⁹⁴ Aelian, *On Animals, Volume I: Books 1-5*, trans. A. F. Scholfield, Loeb Classical Library 446 (Cambridge, MA: Harvard University Press, 1958), 124-5.

²⁹⁵ Aelian, *On Animals*, trans. A. F. Scholfield, 163.

Solinus (3rd century), *The Polyhistor*, 30.23²⁹⁶

§ 30.23 Formicae ibi ad formam canis maximi harenas aureas pedibus eruunt, quos leoninos habent; quas custodiunt, ne quis auferat, captantesque ad necem persequuntur.

§ 30.23 The ants here are shaped like huge dogs, and dig up the golden sand with their feet, which are like lions'. They guard it lest someone steal it, enticing and pursuing them to the death.

Avianus (c. 400 CE), *Fables*, 34²⁹⁷

XXXIV

De Formica et Cicada

[Quisquis torpentem passus transisse iuventam nec timuit vitae providus ante mala, confectus senio, postquam gravis adfuit aetas, heu frustra alterius saepe rogabit opem.]

Solibus ereptos hiemi formica labores distulit et brevibus condidit ante cavis. verum ubi candentes suscepit terra pruinas arvaeque sub rigido delituere gelu, pigra nimis tantos non aequans corpore nimbus in laribus propriis umida grana legit. discolor hanc precibus supplex alimenta rogabat, quae quondam querulo ruperat arva sono: se quoque, maturas cum tunderet area messes, cantibus aestivos explicuisse dies. parvula tunc ridens sic est affata cicadam (nam vitam pariter continuare solent): "mi quoniam summo substantia parta labore est, frigore mediis otia longa traho; at tibi saltandi nunc ultima tempora restant, cantibus est quoniam vita peracta prior."

XXXIV

The Ant and the Grasshopper

[The man that has allowed his youth to go by in idleness and has not taken anxious precautions against the ills of life—that man, foredone with years, will in the presence of burdensome old age often ask in vain, alas, for a neighbour's help.]

An ant reserved for the winter the fruits of toil snatched during sunny hours and stored them betimes in her tiny hole. But when earth assumed its white robe of hoar frost and fields lay hid beneath unyielding ice, then, quite idle and unfit bodily to face the rainstorms, she picked out the moistened grain in her own abode. A grasshopper in her varied hues, who before had cleft the fields with plaintive note, amid prayers and supplications begged the ant for food. For her part, she said, when the threshing-floor was bruising the ripened harvest, she had worked out the summer days in song. Then with a laugh the tiny ant thus addressed the grasshopper (for their wont is to prolong their life equally): "Since my subsistence has been secured by dint of hardest toil, I draw out long days of ease in the midst of the frost. But you now have your last days left for dancing, since your past life was spent in song."

²⁹⁶ Gaius Iulius Solinus, *The Polyhistor*, trans. Arwen Apps, "Gaius Iulius Solinus and his Polyhistor," (PhD diss., Macquarie University, 2011), quoted on "Solinus, Polyhistor," *Topostext*, accessed May 12, 2022, <https://topostext.org/work/747#30.23>.

²⁹⁷ Avianus, *Fables*, in *Minor Latin Poets, Volume II: Florus. Hadrian. Nemesianus. Reposianus. Tiberianus. Dicta Catonis. Phoenix. Avianus. Rutilius Namatianus. Others*, trans. J. Wight Duff, Arnold M. Duff, Loeb Classical Library 434, (Cambridge, MA: Harvard University Press, 1934), 735.

Isidore of Seville (7th century), *Etymologiae*, 12.3.9-10²⁹⁸

9. The ant (formica) is so named because it ‘carries bits of grain’ (fert micas farris). It has great shrewdness, for it provides for the future and prepares during the summer what it consumes in the winter; during the harvest it selects the wheat and does not touch the barley. When it rains on the ant’s grain, the ant throws it out. It is said that in Ethiopia there are ants in the shape of dogs, who dig up golden sand with their feet – they guard this sand lest anyone carry it off, and when they chase something they pursue it to death. 10. The ‘ant lion’ (formicoleon) is so called either because it is the lion (leo) of ants or, more likely, because it is equally an ant and a lion, for it is a small animal very dangerous to ants because it hides itself in the dust and kills the ants carrying grain. And thus it is called both an ‘ant’ and a ‘lion,’ because to the rest of the animals it is like an ant, but to ants it is like a lion.

St. Aldhelm of Malmesbury (c. 639 – 709), *Aenigmata*, 18²⁹⁹

XVIII

dudum compositis ego nomen gesto figuris.
Ut leo sic formica vocor sermone Pelasgo,
tropica nominibus signans praesagia duplis;
Cum rostris avium nequeam resistere rostro.
Scrutetur sapiens gemino cur nomine
fungar!

18

my name’s a hybrid since antiquity.
I’m called a “lion,” then an “ant” in Greek,
a blended metaphor, a sign that’s bleak;
i can’t defend birds’ beaks with my own
beak.
may scholars probe my name’s duplicity!

***Wonders of the East*, BL, Cotton MS Tiberius B V/1, fol. 80v (11th – 12th century)³⁰⁰**

§ 9. Capi uocatur fluuius in eodem loco qui apellatur Gorgoneus; ibi nascuntur formicae statura canum, habentes pedes quasi locustae rubro colore nigroque, fodientes aurum: et quod per noctem fodiunt sub terra profertur foras usque diei horam quintam. Homines autem qui audaces sunt illud tollere sic tollunt: ducunt apud se camelos masculos et feminas illas quae habent foetus. Foetus autem trans flumen Gargulum alligatos relinquunt et camelis foeminis aurum inponunt. Illae autem pietate ad suos pullos festinate, ibi masculi remanent, et illae formicae sequentes inueniunt eos masculos et comedunt eos; dum circa autem eos occupatae sunt, feminae transeunt flumen cum hominibus; sunt autem tam ueloces ut putes eos uolare.

§ 9. The river is named Capi in the same place, which is called Gorgoneus, that is ‘valkyrie-like’. Ants are born there as big as dogs, which have feet like grasshoppers, and are of red and black colour. The ants dig up gold from the ground from before night to the fifth hour of the day. People who are bold enough to take the gold bring with them male camels, and females with their young. They tie up the young before they cross the river. They load the gold onto the females, and mount them themselves, and leave the males there. Then the ants detect the males, and while the ants are occupied with the males, the men cross over the river with the females and the gold. They are so swift that one would think that they were flying.

²⁹⁸ Isidore of Seville, *The Etymologies of Isidore of Seville*, trans. Stephen A. Barney, W. J. Lewis, J. A. Beach, and Oliver Berghof. (Cambridge: Cambridge University Press, 2006), 255.

²⁹⁹ St. Aldhelm of Malmesbury, *Saint Aldhelm’s Riddles*, trans. A. M. Juster. (Toronto: University of Toronto Press, 2015), 11.

³⁰⁰ *Wonders of the East*, in *Pride and Prodigies: Studies in the Monsters of the Beowulf-Manuscript*, trans. Andy Orchard (Cambridge: D. S. Brewer, 1995), 191, § 9.

Baudri of Bourgueil (1045 – 1130), “To Countess Adela,” 903-18³⁰¹

Now it was time to move on to Africa in our viewing;
Time to travel across over the ocean’s expanse.
Really, it felt as though I were actually travelling on water:
The work seemed uncannily real – liquid almost: I was scared.
While I travel, my worry subsides and hope takes over;
As I recall that it’s not really the sea, but dry land.
As I moved closer, I saw the landscape, and set within it,
I saw mountains and towns, handsome rivers and dales,
The Hesperian mountains, Gibraltar, and Atlas, the bearer of stars –
Atlas, fatigued and worn out by the weight of the world.
Piled up all over the continent you’ll see many other mountains,
And – what a daunting sight – Syrtes’s treacherous sands.
Farther back is the desert, populated with busy
Ants of gigantic size, going about their work.
They are as big, I am told, as mice are in our regions;
According to ancient tales, gold is the burden they lug.

³⁰¹ Baudri of Bourgueil. “To Countess Adela,” in “Baudri of Bourgueil, ‘To Countess Adela,’” trans. Monika Otter, *The Journal of Medieval Latin* 11 (2001): 88.

Gervase of Tilbury (c. 1150 – 1220), *Otia Imperialia*, 3.73³⁰²

Est In eadem insula flumen Gargatum, trans quod nascuntur formice mirmidones, magnitudine catulorum, habentes pedes senos et centrios quasi locusce marine; dentes canum habent, colore nigre, aurumque custodiunt, quod proferunt de subterraneis ad lucem. Cum uero hominem aut animal quodlibet attigerint, ad ossa deuorant. Suntque uelocissime, ut magis uolare quam gradi censeantur. He sole oriente usque in horam quintam sub terra aurum fodiunt, et exinde in lucem producant, quod ab artificibus ingeniose extrahitur. Ducunt enim camelos quam plures et camelas cum pullis suis, et cum ad ripam transeundi fluminis peruenerint, ad riparios cespites pullos alligant. Transito itaque flumine cum utriusque sexus camelis, camelabus aurum imponunt, que onuste et amore pullorum allecte cursu festino transuadant. Comperientes igitur homines insequentium agroina formicarum, relictis ad fluuium et ad deuorandum expositis camelis masculis, celeri transitu flumen peragrant. Sane formice, predonum captura fraudate, obiectorum camelorum deuoratione retardantur, et fluuiio contradicente prepediti, faciunt quod possunt dum deuorant camelos quos inueniunt. Sic fit ut aurum illud obrizum ad nos usque perueniat.

On the same island is the river Gargarum, beyond which are found giant ants' as big as puppies, each with six feet, and a body' like a lobster's; they hate dogs' fangs, and are black in colour. They board gold, which they bring up to the light from underground. If ever they catch a human being or any living creature, they gnaw them down to the bones. They are very fast-moving, so that they appear to fly rather than walk. From sunrise until eleven o'clock they mine gold underground, and from that time on they bring it out into the light. It is ingeniously extracted from them by tricksters. For people take as many camels as possible, together with their mates and their young, and when they reach the bank of the river that has to be crossed, they tie the baby camels to clumps of bushes on the bank. They then cross the river with the camels of both sexes, and load the gold onto the female ones. These, loaded down, but enticed by the love of their young, make rapid headway in crossing the water. Then the men, as soon as they perceive columns of ants coming after them, leave the male camels by the river as an easy prey to be devoured, and hastily cross to the other side of the water. And in fact the ants, cheated as they have been by the robbers' looting, are hindered by their consumption of the camels left in their way, and impeded by the obstacle of the river, so that all they can do is devour the camels which they find. It is by such means that that pure gold reaches us.

***The Aberdeen Bestiary* (c. 1200)³⁰³**

De formicis \ Formica tres naturas habet. Prima natura est ut ordinatē ambulent, et

Of ants The ant has three characteristics. The first is that they march in line, each one

³⁰² Gervase of Tilbury, *Otia Imperialia: Recreation for an Emperor*, trans. S. E. Banks and J. W. Binns (Oxford Medieval Texts. Oxford: Clarendon Press, 2002), 698-9.

³⁰³ Aberdeen, Aberdeen University Library, MS 24, f. 24v-25v, <https://www.abdn.ac.uk/bestiary/ms24/f24v>.

unaqueque earum granum baiulet in ore suo. \Et he que vacue sunt, non dicunt date nobis de granis vestris, \sed vadunt per vestigia priorum usque ad locum ubi frumentum \inveniunt et afferunt frumentum in cubile suum. Habet ad pru\dentium significationem dicta sufficiant, quia sicut formice con\gregant unde remunerentur in futuro. Secunda natura quando recon\dit grana in cubile suum dividit ea in duo, ne forte pluvia \infundantur in hieme, et germinent grana et fame pereat, sic et \tu homo verba veteris et novi testamenti divide, id est discerne inter \spiritualia et carnalia, ne littera te occidat, quam lex spiritualis est sicut \apostolus ait: Littera enim occidit, spritus autem vivificat. Judei namque \solam litteram attendentes, et spiritualem intellectum contempnen\tes, fame necati sunt. Tertia natura est. Tempore messis ambu \lat inter segetes, et ore intelligit an ordei sit spica an tritici. Si \fuerit ordei, transit ad aliud spicum et odorat, et si senserit quia \tritici est, ascendit in summitatem spici, et tollens inde gra\num portat in habitaculum suum. Ordeum enim brutorum \animalium cibus est. Unde dicit Job: pro tritico prodivit mihi ordeum, \scilicet doctrine hereticorum. Ordeacee enim sunt et procul abiciende, \que dirumpunt et interficiunt animas hominum. Fuge ergo \Christiane omnes hereticos quorum dogmata falsa et inimica sunt \veritati. Dicit enim scriptura: Conferte ad formicam opiger, \emulare vias eius, et esto illa sapientior. Illa enim culturam nullam \possidet neque eam qui se cogat habet, neque sub domino agit quemad\modum preparat escam, que de tuis laboribus sibi messem recon\dit. Et cum tu plerumque egeas, illa non indiget. Nulla sunt \ei clausa horrea, nulle impenetrabiles custodie, nulli inviolabi\les acervi. Spectat custos furta que prohibere non audeat, aspi\cit sua dampna possessor nec vindicat. Nigro convertatur agmi\ne preda per campos, fervent semite comitatu viantium, et que \comprehendi angusto [A, angustio ore/angustiore] non possunt humeris frumenta traduntur. \Spectat hec dominus messis et erubescit tam parca pie indu\strie negare compendia. Novit etiam formica explorare sere\nitatis tempora. Nam

carrying a grain of corn in its mouth. Those who have none do not say to the others: 'Give us some of your grain', but follow the tracks of those who first went out to the place where they find the corn and carry it off to their nest. Let this description serve to signify sensible men, who, like the ants, act in unity, as a result of which they will be rewarded in the future. The ant's second characteristic is that when it stores grain in its nest, it divides its supply in two, lest by chance it should be soaked in the winter rains, the seed germinate and the ant die of hunger. In the same way, you, O man, should keep separate the words of the Old and the New Testament, that is, distinguish between the spiritual and the carnal, lest the law interpreted literally should kill you, for the law is a spiritual thing, as the Apostle says: 'For the letter killeth, but the spirit giveth life' (2 Corinthians, 3:6). For the Jews, who paid attention only to the letter of the law and scorned its spiritual interpretation, have died of hunger. The ant's third characteristic is that at harvest time it walks through the crop and finds out by nibbling the ears whether it is barley or wheat. If the crop is barley, the ant goes to another ear and sniffs it, and if it smells wheat, it climbs to the top of the ear and carries off the grain to its nest. For barley is food for beasts. As Job says: 'Barley grew for me instead of wheat' (see Job, 31:40), meaning the doctrine of heretics. For heresy is like barley, and should be cast away, because it shatters and destroys men's souls. Therefore, Christian, flee from all heretics; their teachings are false and hostile to the truth. For the Scriptures say: 'Go to the ant, thou sluggard, consider her ways and be wise' (Proverbs, 6:6). For the ant has no knowledge of cultivation; it has no-one to force it do anything; nor does it act under the direction of a master, telling it how to lay in a store of food. Yet it gathers in its harvest from your labours. And although you often go hungry, it lacks for nothing. It has no locked storehouses, no impenetrable security, no piles of supplies which cannot be touched. The watchman looks on at thefts which he dares not prevent, the owner is

cum adverterit madidatos imbre fructus suos humescere explorato diligentius aere, quando iugem possit servare temperiem, acervos reserat suos, et de cavernis foras suis humeris exportat, iugi sole propria frumenta siccentur. Denique haut unquam illis diebus omnibus rumpi de nubibus imbres videbis, nisi cum fruges suas horreis propriis formica revocaverit.

aware of his losses but takes no revenge. They carry their booty in a black column across the fields, the paths swarming with the convoy as it passes; the grains that cannot be held in their narrow mouths in narrow parts are consigned to their shoulders. The owner of the harvest looks on and blushes with shame at the thought of denying such frugal gains won by such conscientious industry. The ant has also learned to watch out for periods of fine weather. For if it sees that its supplies of corn are becoming wet, soaked by the rain, it carefully tests the air for signs of a mild spell, then it opens up its stores, and carries its supplies on its shoulders from its vaults underground out into the open, so that the corn can dry in the unbroken sunshine. Finally, you will never on any of those days see rain spouted from the clouds, unless the ant has first returned its supplies of corn to its stores.

Bibliography

Manuscripts

- Aberdeen. Aberdeen University Library, MS 24, fols. 24v-25r.
<https://www.abdn.ac.uk/bestiary/ms24/f24v>.
- Cambridge. Cambridge University Library, MS Kk.4.25, fols. 75v-76r.
<https://cudl.lib.cam.ac.uk/view/MS-KK-00004-00025/138>.
- Cambridge. Cambridge University Library, MS Ii.4.26, fols. 29r-30r.
<https://cudl.lib.cam.ac.uk/view/MS-II-00004-00026/73>.
- Cambridge. Corpus Christi College, MS 22, fols. 167r-v.
<https://parker.stanford.edu/parker/catalog/xd956wx5361>.
- Cambridge. Corpus Christi College MS 53, fols. 189r-v.
<https://parker.stanford.edu/parker/catalog/gs233db8425>.
- Copenhagen. Koninklijke Bibliotek, Gl. Kgl. 1633-4, fols. 29v-30v.
<http://www5.kb.dk/permalink/2006/manus/221/dan/29+verso/?var=>.
- Épinal. Bibliothèque Multimédia Intercommunale d'Épinal, MS 209, fols. 71v; 73v-74r.
<https://galeries.limedia.fr/ark:/18128/dg7wbd4gmfvkhqx0/p151>.
- Le Mans. Bibliothèque Municipale de Le Mans, MS 84, fols. 31v-33r.
https://bvmm.irht.cnrs.fr//consult/consult.php?mode=ecran&panier=false&reproductionId=5462&VUE_ID=1169131&carouselThere=false&nbVignettes=4x3&page=3&angle=0&zoom=moyen&tailleReelle=.
- Leipzig. Universitätsbibliothek Leipzig, Cod. gr. 35, fols. 34r. <https://digital.ub.uni-leipzig.de/mirador/index.php>.
- Leipzig. Universitätsbibliothek Leipzig, Ms 351, fols. 31r-v. <https://digital.ub.uni-leipzig.de/mirador/index.php>.
- Leipzig. Universitätsbibliothek Leipzig, Ms 1305, fols. 59v-60r. <https://digital.ub.uni-leipzig.de/mirador/index.php>.
- Linz. Österreichische Landesbibliothek, Hs.-33, fols. 144v-145r.
<https://digi.landesbibliothek.at/viewer/image/33/290/>.
- London. British Library, Additional MS 11283, fols. 15v-16r.
http://www.bl.uk/manuscripts/Viewer.aspx?ref=add_ms_11283_fs001r.
- London. British Library, Cotton MS Tiberius B V/1, fols. 80v.
http://www.bl.uk/manuscripts/Viewer.aspx?ref=cotton_ms_tiberius_b_v!1_f002r.
- London. British Library, Cotton MS Vitellius A XV, fols. 101r.
http://www.bl.uk/manuscripts/Viewer.aspx?ref=cotton_ms_vitellius_a_xv_f094r.

- London. British Library, Harley MS 3244, fols. 50r-v.
http://www.bl.uk/manuscripts/Viewer.aspx?ref=harley_ms_3244.
- London. British Library, Harley MS 4751, fols. 32r-33r.
http://www.bl.uk/manuscripts/Viewer.aspx?ref=harley_ms_4751_fs001r.
- London. British Library, Royal MS 2 B VII, fols. 95v-96r.
http://www.bl.uk/manuscripts/Viewer.aspx?ref=royal_ms_2_b_vii_fs001ar.
- London. British Library, Royal MS 12 C XIX, fols. 24v-26r.
http://www.bl.uk/manuscripts/Viewer.aspx?ref=royal_ms_12_c_xix_fs001r.
- London. British Library, Royal MS 12 F XIII, fols. 45v-46r.
http://www.bl.uk/manuscripts/Viewer.aspx?ref=royal_ms_12_f_xiii_fs001r.
- London. British Library, Sloane MS 278, fols. 54v-55v.
http://www.bl.uk/manuscripts/Viewer.aspx?ref=sloane_ms_278_fs001r.
- London. British Library, Stowe MS 1067, fols. 9r-v.
http://www.bl.uk/manuscripts/Viewer.aspx?ref=stowe_ms_1067_fs001r.
- Los Angeles. Getty Museum, MS 100, fols. 23r.
<https://www.getty.edu/art/collection/object/109B2G>.
- Munich. Bayerische Staatsbibliothek, Gall. 16, fols. 26r. <https://www.digitale-sammlungen.de/en/view/bsb00056556?page=55>.
- Munich. Bayerische Staatsbibliothek, Clm 536, fols. 74v-75v. <https://www.digitale-sammlungen.de/en/view/bsb00007208?page=152>.
- Munich. Bayerische Staatsbibliothek, Clm 2655, fols. 100v-101r. <https://www.digitale-sammlungen.de/en/view/bsb00112027?page=208>.
- Munich. Bayerische Staatsbibliothek, Clm 6908, fols. 79r; 82v-83r. <https://www.digitale-sammlungen.de/en/view/bsb00078560?page=170>.
- Munich. Bayerische Staatsbibliothek, Clm 14216, fols. 15v-16r. <https://www.digitale-sammlungen.de/en/view/bsb00036075?page=36>.
- Munich. Bayerische Staatsbibliothek, Clm 14348, fols. 250v-251r. <https://www.digitale-sammlungen.de/en/view/bsb00046577?page=504>.
- New York. Pierpont Morgan Library, MS M 81, fols. 31v-33r.
<https://www.themorgan.org/collection/workshop bestiary/36>.
- New York. Pierpont Morgan Library, MS M 832, fols. 7v-8r.
<http://ica.themorgan.org/manuscript/page/11/158985>.
- New York. Pierpont Morgan Library, MS M 890, fols. 8v.
<https://www.themorgan.org/collection/bestiary/159535/15>.

- Oxford. Bodleian Library, MS Ashmole 1511, fols. 36v-37r.
<https://digital.bodleian.ox.ac.uk/objects/faeff7fb-f8a7-44b5-95ed-cff9a9ffd198/surfaces/a5bcf8ab-12e9-4f1f-87cc-a1cc8fdf72ad/>.
- Oxford. Bodleian Library, MS Bodley 614, fols. 39r-v.
<https://digital.bodleian.ox.ac.uk/objects/a43be554-c5b0-42f0-94e0-70222bb2a964/surfaces/ece9795d-976c-4e2a-b15b-2fe8605b9369/>.
- Oxford. Bodleian Library, MS Bodley 764, fols. 53v-54v.
<https://digital.bodleian.ox.ac.uk/objects/e6ad6426-6ff5-4c33-a078-ca518b36ca49/surfaces/51947544-f5f1-4daa-9c64-3c02f2a803f8/>.
- Paris. Bibliothèque Nationale de France, Français 1444, fols. 245r.
<https://gallica.bnf.fr/ark:/12148/btv1b52513422x/f496.item>.
- Paris. Bibliothèque Nationale de France, Français 14969, fols. 17r.
<https://gallica.bnf.fr/ark:/12148/btv1b10020145j/f39.item>.
- Paris. Bibliothèque Nationale de France, Lat. 3630, fols. 85r-v.
<http://visualiseur.bnf.fr/Visualiseur?Destination=Mandragore>.
- Paris. Bibliothèque Nationale de France, Lat. 6838B, fols. 19r-v.
<https://gallica.bnf.fr/ark:/12148/btv1b10464770j/f43.item>.
- Paris. Bibliothèque Nationale de France, Lat. 10448, fols. 120v.
<https://gallica.bnf.fr/ark:/12148/btv1b9066069t/f122.item.zoom#>.
- Paris. Bibliothèque Nationale de France, Lat. 11207, fols. 17r-18r.
<https://gallica.bnf.fr/ark:/12148/btv1b53188245c/f41.item>.
- Paris. Bibliothèque Nationale de France, Lat. 14429, fols. 115v-116r.
<https://gallica.bnf.fr/ark:/12148/btv1b10033822c/f119.item.zoom#>.
- Paris. Bibliothèque Nationale de France, Nouv. Acq. Lat. 873, fols. 41r-42r.
<https://gallica.bnf.fr/ark:/12148/btv1b100321695/f44.item>.
- The Hague. Koninklijke Bibliotheek, KB, 76 E 4, fols. 15v.
https://manuscripts.kb.nl/zoom/BYVANCKB%3Amimi_76e4%3A015v_min_b2.
- Valenciennes. Bibliothèque Municipale de Valenciennes, MS 101, fols. 197v.
https://patrimoine-numerique.ville-valenciennes.fr/ark:/29755/B_596066101_MS_0101/F_171_DET_2/v0001.simple.selectedTab=otherdocs.
- Vatican. Biblioteca Apostolica Vaticana, Pal. lat. 1074, fols. 4v-5v.
https://digi.vatlib.it/view/MSS_Pal.lat.1074.
- Vatican. Biblioteca Apostolica Vaticana, Reg. Lat. 258, fols. 21v-22v.
https://digi.vatlib.it/view/MSS_Reg.lat.258.

Vienna. Österreichische Nationalbibliothek, Cod. 13378, fols. 5r-v.
https://digital.onb.ac.at/RepViewer/viewer.faces?doc=DTL_6717035&order=1&view=SINGLE.

Maps

“Hereford Map (Hereford Cathedral).” Edited by Cat Crossley, Heather Wacha, and Martin Foys. In *Virtual Mappa*, eds. Martin Foys, Heather Wacha et al. Schoenberg Institute of Manuscript Studies, 2020. <https://sims2.digitalmappa.org/36>. DOI: 10.21231/ef21-ev82.

“Ebstorf Map.” Hyper Image. Accessed February 13, 2022.
https://warnke.web.leuphana.de/hyperimage/EbsKart/#V13_022/.

Primary Sources

Aelian. *On Animals, Volume I: Books 1-5*. Translated by A. F. Scholfield. Loeb Classical Library 446. Cambridge, MA: Harvard University Press, 1958.

Avianus. *Fables*. In *Minor Latin Poets, Volume II: Florus. Hadrian. Nemesianus. Reposianus. Tiberianus. Dicta Catonis. Phoenix. Avianus. Rutilius Namatianus. Others*. Translated by J. Wight Duff and Arnold M. Duff. Loeb Classical Library 434. Cambridge, MA: Harvard University Press, 1934.

Baudri of Bourgueil. “To Countess Adela.” In “Baudri of Bourgueil, ‘To Countess Adela,’” translated by Monika Otter. *The Journal of Medieval Latin* 11 (2001): 60-141.

Cicero. *On Ends*. Translated by H. Rackham. Loeb Classical Library 40. Cambridge, MA: Harvard University Press, 1914.

Cicero. *On Old Age. On Friendship. On Divination*. Translated by W. A. Falconer. Loeb Classical Library 154. Cambridge, MA: Harvard University Press, 1923.

Cyranides, Book 2. Quoted in Mia Gerhardt. “The Ant Lion. Nature Study and Interpretation of a Biblical Text, from the ‘Physiologus’ to Albert the Great,” 8. *Vivarium* 3 (1965): 1-23.

Dio Chrysostom. *Discourses 31-36*. Translated by J. W. Cohoon and H. Lamar Crosby. Loeb Classical Library 358. Cambridge, MA: Harvard University Press, 1940.

Dio Chrysostom. *Discourses 37-60*. Translated by H. Lamar Crosby. Loeb Classical Library 376. Cambridge, MA: Harvard University Press, 1946.

Gaius Iulius Solinus. *The Polyhistor*. Translated by Arwen Apps. “Gaius Iulius Solinus and his Polyhistor.” PhD diss., Macquarie University, 2011. Quoted on “Solinus, Polyhistor.” *Topostext*. Accessed May 12, 2022. <https://topostext.org/work/747#30.23>.

- Gervase of Tilbury. *Otia Imperialia: Recreation for an Emperor*. Translated by S. E. Banks and J. W. Binns. Oxford Medieval Texts. Oxford: Clarendon Press, 2002.
- Herodotus. *The Persian Wars, Volume II: Books 3-4*. Translated by A. D. Godley. Loeb Classical Library 118. Cambridge, MA: Harvard University Press, 1921.
- Horace. *Satires. Epistles. The Art of Poetry*. Translated by H. Rushton Fairclough. Loeb Classical Library 194. Cambridge, MA: Harvard University Press, 1926.
- Isidore of Seville. *The Etymologies of Isidore of Seville*. Translated by Stephen A. Barney, W. J. Lewis, J. A. Beach, and Oliver Berghof. Cambridge: Cambridge University Press, 2006.
- Juvenal, and Persius. *Juvenal and Persius*. Edited and translated by Susanna Morton Braund. Loeb Classical Library 91. Cambridge, MA: Harvard University Press, 2004.
- Ovid. *Tristia. Ex Ponto*. Translated A. L. Wheeler. Revised by G. P. Goold. Loeb Classical Library 151. Cambridge, MA: Harvard University Press, 1924.
- Pliny. *Natural History, Volume III: Books 8-11*. Translated by H. Rackham. Loeb Classical Library 353. Cambridge, MA: Harvard University Press, 1940.
- Phaedrus. *Fables*. Translated by Ben Edwin Perry. Loeb Classical Library 436. Cambridge, MA: Harvard University Press, 1965.
- Physiologus*. Translated by Michael J. Curley. Chicago: University of Chicago Press, 1979.
- Quintilian. *The Orator's Education, Volume II: Books 3-5*. Edited and translated by Donald A. Russell. Loeb Classical Library 125. Cambridge, MA: Harvard University Press, 2002.
- St. Aldhelm of Malmesbury. *Saint Aldhelm's Riddles*. Translated by A. M. Juster. Toronto: University of Toronto Press, 2015.
- St. Augustine. *Annotationes in Job*, 4.11. Translated by Mia Gerhardt. In Mia Gerhardt, "The Ant Lion. Nature Study and Interpretation of a Biblical Text, from the 'Physiologus' to Albert the Great," *Vivarium* 3 (1965): 14.
- St. Gregory. *Moralia sive Expositio in Job*, 5.40. Translated by Mia Gerhardt. In Mia Gerhardt, "The Ant Lion. Nature Study and Interpretation of a Biblical Text, from the 'Physiologus' to Albert the Great," *Vivarium* 3 (1965): 13.
- Strabo. *Geography, Volume VII: Books 15-16*. Translated by Horace Leonard Jones. Loeb Classical Library 241. Cambridge, MA: Harvard University Press, 1930.
- Valerius Maximus. *Memorable Doings and Sayings, Volume I: Books 1-5*. Edited and translated by D. R. Shackleton Bailey. Loeb Classical Library 492. Cambridge, MA: Harvard University Press, 2000.
- Virgil. *Eclogues. Georgics. Aeneid: Books 1-6*. Translated by H. Rushton Fairclough. Revised by G. P. Goold. Loeb Classical Library 63. Cambridge, MA: Harvard University Press, 1916.

Wonders of the East. In *Pride and Prodigies: Studies in the Monsters of the Beowulf-Manuscript*, translated by Andy Orchard, 185-203. Cambridge: D. S. Brewer, 1995.

Secondary Sources

“Aelian, *On Animals*, Volume I: Books 1-5.” Loeb Classical Library. Accessed May 8, 2022. <https://www.loebclassics.com/view/LCL446/1958/volume.xml>.

Alpers, Klaus. “Untersuchungen zum griechischen Physiologus und den Kyraniden,” *Vestigia Bibliae (Jahrbuch des deutschen Bibel-Archivs, Hamburg)* 6 (1984): 13-84.

Badke, David. “Aberdeen University Library, Univ. Lib. MS 24.” The Medieval Bestiary. Accessed February 14, 2022. <http://bestiary.ca/manuscripts/manu100.htm>.

———. “Ant.” The Medieval Bestiary. Accessed February 14, 2022. <http://bestiary.ca/beasts/beast218.htm>.

———. “Asp.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/beasts/beast268.htm>.

———. “Bayerische Staatsbibliothek, Gall.16.” The Medieval Bestiary. Accessed February 13, 2022. <http://bestiary.ca/manuscripts/manu1730.htm>.

———. “Bayerische Staatsbibliothek, Clm 536.” The Medieval Bestiary. Accessed February 13, 2022. <https://bestiary.ca/manuscripts/manu101092.htm>.

———. “Bayerische Staatsbibliothek, Clm 2655 (Liber de naturis rerum visibilium).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu101093.htm>.

———. “Bayerische Staatsbibliothek, Clm 6908 (Fürstenfelder Physiologus).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu5537.htm>.

———. “Bayerische Staatsbibliothek, Clm 14216.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu101126.htm>.

———. “Bayerische Staatsbibliothek, Clm 14348.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu101132.htm>.

———. “Bestiary Families – Latin.” The Medieval Bestiary. Accessed February 13, 2022. http://bestiary.ca/articles/family/mf_latin.htm.

———. “Biblioteca Apostolica Vaticana, Pal lat.1074.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu2243.htm>.

———. “Biblioteca Apostolica Vaticana, Reg. Lat. 258.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu100995.htm>.

———. “Bibliothèque Multimédia Intercommunale d'Epinal, MS 209.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu101533.htm>.

- . “Bibliothèque Municipale de Le Mans, 84.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu101009.htm>.
- . “Bibliothèque Municipale de Valenciennes, MS 101 (Aviary / Bestiary).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu4776.htm>.
- . “Bibliothèque Nationale de France, Lat. 3630.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu1525.htm>.
- . “Bibliothèque Nationale de France, Lat. 6838B.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu5593.htm>.
- . “Bibliothèque Nationale de France, Lat. 10448.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu2493.htm>.
- . “Bibliothèque Nationale de France, Lat. 11207.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu2497.htm>.
- . “Bibliothèque Nationale de France, Lat. 14429.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu1517.htm>.
- . “Bibliothèque Nationale de France, Nouv. acq. lat. 873.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu1042.htm>.
- . “Bodleian Library, MS. Ashmole 1511 (The Ashmole Bestiary).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu556.htm>.
- . “Bodleian Library, MS. Bodley 764.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu1085.htm>.
- . “British Library, Additional MS 11283.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu980.htm>.
- . “British Library, Harley MS 3244.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu1020.htm>.
- . “British Library, Harley MS 4751 (Harley Bestiary).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu1010.htm>.
- . “British Library, Royal MS 2 B VII (The Queen Mary Psalter).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu973.htm>.
- . “British Library, Royal MS 12 C XIX (Rochester Bestiary).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu979.htm>.
- . “British Library, Royal MS 12 F XIII.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu978.htm>.
- . “British Library, Sloane MS 278 (Aviary / Dicta Chrysostomi).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu1017.htm>.

- . “British Library, Stowe MS 1067.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu971.htm>.
- . “Cambridge University Library, Gg. 6. 5 (Liber de Bestiis et Aliis rebus).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu944.htm>.
- . “Cambridge University Library, Kk. 4. 25.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu946.htm>.
- . “Cambridge University Library, Ii. 4. 26.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu945.htm>.
- . “Catoblepas.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/beasts/beast2821.htm>.
- . “Corpus Christi College, MS 22.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu936.htm>.
- . “Corpus Christi College, MS 53 (The Peterborough Psalter and Bestiary).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu937.htm>.
- . “Crocodile.” The Medieval Bestiary. Accessed May 16, 2022. 2022, <https://bestiary.ca/beasts/beast272.htm>.
- . “Getty Museum, MS. 100 (The Northumberland Bestiary).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu2886.htm>.
- . “Hoopoe.” The Medieval Bestiary. Accessed May 16, 2022. 2022, <https://bestiary.ca/beasts/beast243.htm>.
- . “Ibex.” The Medieval Bestiary. Accessed May 16, 2022. 2022, <https://bestiary.ca/beasts/beast154.htm>.
- . “Introduction to the Medieval Bestiary.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/intro.htm>.
- . “Kongelige Bibliotek, GKS 1633 4° (Bestiary of Ann Walsh).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu94.htm>.
- . “Oberösterreichische Landesbibliothek, Hs.-33.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu101267.htm>.
- . “Österreichische Nationalbibliothek, Cod. 13378.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu101201.htm>.
- . “Pierpont Morgan Library, MS M.81 (The Worksop Bestiary).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu1046.htm>.
- . “Pierpont Morgan Library, MS M. 832 (De naturis bestiarum).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu1507.htm>.

- . “Pierpont Morgan Library, MS M.890 (Fountains Abbey Bestiary).” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu1515.htm>.
- . The Medieval Bestiary: Animals in the Middle Ages. Last updated April 29, 2022. <https://bestiary.ca/index.html>.
- . “Universitätsbibliothek Leipzig, Cod. gr. 35.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu101228.htm>.
- . “Universitätsbibliothek Leipzig, Ms 351.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu100977.htm>.
- . “Universitätsbibliothek Leipzig, Ms 1305.” The Medieval Bestiary. Accessed May 16, 2022. <https://bestiary.ca/manuscripts/manu100978.htm>.
- . “Weasel.” The Medieval Bestiary. Accessed May 16, 2022. 2022, <https://bestiary.ca/beasts/beast150.htm>.
- Baldwin, Barry. “‘Cyranidea’: Some Improvements.” *Illinois Classical Studies* 17, No. 1 (1992): 103-107.
- Baxandall, Michael. *Painting and Experience in Fifteenth-Century Italy. A Primer in the Social History of Pictorial Style*. Oxford and New York: Oxford University Press, 1988.
- Baxter, Ron. *Bestiaries and their Users in the Middle Ages*. London: Sutton Publishing, 1998.
- Berkowitz, L., and K. A. Squitier. *Thesaurus Linguae Graecae: Canon of Greek Authors and Works*, 2nd edition. New York, 1986.
- Britannica, T. Editors of Encyclopaedia. “Aldhelm.” *Encyclopedia Britannica*. June 18, 2013. <https://www.britannica.com/biography/Aldhelm>.
- Cesario, Marilina. “Ant-Lore in Anglo-Saxon England.” *Anglo-Saxon England* 40 (2012): 273-291.
- Clark, Willene B. *A Medieval Book of Beasts: The Second-Family Bestiary*. Woodbridge: The Boydell Press, 2006.
- Clark, Willene B., and Meredith T. McMunn. *Beasts and Birds of the Middle Ages: The Bestiary and its Legacy*. Philadelphia: University of Pennsylvania Press, 1989.
- Clark, Willene B. “The Aviary-Bestiary at the Houghton Library, Harvard.” In *Beasts and Birds of the Middle Ages*, edited by Willene B. Clark and Meredith T. McMunn, 26-52. Philadelphia: University of Pennsylvania Press, 1989.
- “Cotton MS Tiberius B V/1.” Digitised Manuscripts. British Library. Accessed February 12, 2022. http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Cotton_MS_Tiberius_B_V/1
- “Cotton MS Vitellius A XV.” Digitised Manuscripts. British Library. Accessed February 12, 2022. http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Cotton_MS_Vitellius_A_XV.

- Dines, Ilya. "Latin Bestiaries." *The Encyclopedia of Medieval Literature in Britain*, edited by Siân Echard and Robert Rouse. John Wiley & Sons, 2017. DOI: 10.1002/9781118396957.wbemlb232.
- Dines, Ilya. "Producing the Bestiary" *Medievalista* 29 (2021): 91-116.
- Dines, Ilya. "The Problem of the *Transitional Family* of Bestiaries." *Reinardus Yearbook of the International Reynard Society* 24 (2012): 29-52.
- Druce, George. "An Account of the Murmekoleon or Ant-Lion." *The Antiquities Journal* 3 (1923): 347-364.
- "Ebstorf Map." Hyper Image. Accessed February 13, 2022.
https://warnke.web.leuphana.de/hyperimage/EbsKart/#V13_022/.
- "Français 1444." Bibliothèque Nationale de France: Archives et manuscrits. Accessed February 12, 2022. <https://archivesetmanuscrits.bnf.fr/ark:/12148/cc44994g>.
- "Français 14429." Bibliothèque Nationale de France: Archives et manuscrits. Accessed February 12, 2022. <https://archivesetmanuscrits.bnf.fr/ark:/12148/cc751833>.
- "Français 14969." Bibliothèque Nationale de France: Archives et manuscrits. Accessed February 12, 2022. <https://archivesetmanuscrits.bnf.fr/ark:/12148/cc455131>.
- George, Wilma, and Brundson Yapp. *The Naming of the Beasts*. London: Duckworth, 1991.
- Gerhardt, Mia. "The Ant Lion. Nature Study and Interpretation of a Biblical Text, from the 'Physiologus' to Albert the Great." *Vivarium* 3 (1965): 1-23.
- Gravestock, Pamela. "Did Imaginary Animals Exist?" In *The Mark of the Beast: The Medieval Bestiary in Art, Life, and Literature*, edited by Debra Hassig, 119-40. New York: Garland Publishing, 1999.
- Higgs Strickland, Debra. "The Bestiary on Medieval World Maps." In *Book of Beasts: The Bestiary in the Medieval World*, edited by Elizabeth Morrison, 267-74. Los Angeles: Getty Publications, 2019.
- Hassig, Debra. "Marginal Bestiaries." In *Animals and the Symbolic in Mediaeval Art and Literature*, edited by L. A. J. R. Houwen, 171-88. Groningen: Egbert Forsten, 1997.
- Hassig, Debra. *Medieval Bestiaries: Text, Image, Ideology*. Cambridge: Cambridge University Press, 1995.
- "Hic grandes formice (Hereford Map, Hereford Cathedral)." Edited by Cat Crossley, Heather Wacha, and Martin Foys. In *Virtual Mappa*. Edited by Martin Foys, Heather Wacha et al. Schoenberg Institute of Manuscript Studies, 2020.
<https://sims2.digitalmappa.org/36>. DOI: 10.21231/ef21-ev82.
- Hoogvliet, Margriet. "Animals in Context: Beasts on the Hereford Map and Medieval Natural History." In *The Hereford World Map: Medieval World Maps and their Context*, edited by P. D. A. Harvey, 153-66. London: British Library, 2006.

- Houwen, L.A.J. "Animal Parallelism in Medieval Literature and the Bestiaries." *Neophilologus* 78, no. 3 (1994): 483-496.
- James, M. R. *The Bestiary: Being A Reproduction in Full of Ms. li 4. 26 in the University Library, Cambridge, with supplementary plates from other manuscripts of English origin, and a preliminary study of the Latin bestiary as current in England*. Oxford: Roxburghe Club, 1928.
- Kay, Sarah. "'The English Bestiary', the Continental 'Physiologus', and the Intersections Between Them." *Medium Ævum* 85, no. 1 (2016): 118-142.
- Kim, Susan. "Man-Eating Monsters and Ants as Big as Dogs." In *Animals and the Symbolic in Mediaeval Art and Literature*, edited by L.A.J.R. Houwen, 39-52. Groningen: Egbert Forsten, 1997.
- Kline, Naomi Reed. *Maps of Medieval Thought: The Hereford Paradigm*. Woodbridge: The Boydell Press, 2001.
- Macé, Caroline, and Jost Gippert. "Preface." In *The Multilingual Physiologus: Studies in the Oldest Greek Recension and Its Translations*, edited by Caroline Macé and Jost Gippert, 15-26. Belgium: Breopls, 2021.
- McCulloch, Florence. *Mediaeval French and Latin Bestiaries*. Chapel Hill: University of North Carolina Press, 1962.
- Mittman, Asa and Susan Kim. *Inconceivable Beasts: The Wonders of the East in the Beowulf Manuscript*. Arizona: ACMRS, 2013.
- MS. Bodl. 614." *Medieval Manuscripts in Oxford Libraries*. Accessed February 12, 2022. https://medieval.bodleian.ox.ac.uk/catalog/manuscript_1623.
- Panayiotou, George. "Paralipomena Lexicographica Cyranidea." *Illinois Classical Studies* 15, No. 2 (1990): 295-338.
- Peissel, Michel. *The Ants' Gold: The Discovery of the Greek El Dorado in the Himalayas*. London: Harvill, 1984.
- Reimer, Thomas. *Kleiner als Hunde, aber größer als Füchse: Die Goldameisen des Herodot*. Münster: Nodus Publikationen, 2005.
- Schneider, Horst. "Introduction to the *Physiologus*." In *The Multilingual Physiologus: Studies in the Oldest Greek Recension and Its Translations*, edited by Caroline Macé and Jost Gippert, 31-48. Belgium: Breopls, 2021.
- Westrem, Scott. *The Hereford Map*. Turnhout: Brepols, 2001.
- Yapp, Brundson. "A New Look at English Bestiaries." *Medium Ævum* 54, no. 1 (1985): 1-19.
- Yapp, Brundson. "Introduction." In *The Naming of the Beasts*, by Wilma George and Brundson Yapp, 1-28. London: Duckworth, 1991.