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‘Companions, playmates and status-symbols: pet-keeping in Medieval England.’

By

Ceri Jade Urmson

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I certify that:

a) The following dissertation is my own original work.

b) The source of all non-original material is clearly indicated.

c) All material presented by me for other modules is clearly indicated.

d) All assistance received has been acknowledged.

Abstract

This dissertation examines archaeological evidence for pet-keeping in Britain from AD900-1485 to investigate past pet/human relationships by focussing on the presence and absence of rabbits, red squirrels and jackdaws on British archaeological sites. Both recent academic work and the documentary evidence show that pet-keeping was more popular among children and women, and both male and female members of the clergy; which would suggest that pets are more likely to be present at sites frequented by these social subgroups, e.g. urban and ecclesiastical sites. This dissertation will also discuss how pets were treated after death and if companion animals are archaeologically recognisable, and why this would be the case. It also aims to discuss if there are any potential British examples of pet burials from this time period.

There is limited literary evidence available on the practise of Medieval pet-keeping, although a number of documentary sources discuss this practise, notably Church officials who tended to disapprove of pets and frequently tried (and failed) to ban them. This dissertation will investigate how the skeletal evidence correlates with the literary evidence for pet-keeping in Medieval Britain.

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Chapter One: Introduction

The two most common species of domestic animals kept in Western Europe and North America as pets are dogs and cats (PFMA, 2014). However, many other species are kept as pets including rabbits, ferrets, caged birds, monkeys, reptiles, leopards, badgers etc. This dissertation will focus on the following species: rabbits, red squirrels, parrots, small caged birds, and jackdaws.

The archaeology of pets, which has until the past two decades been severely neglected, has recently become the focus of increased academic interest (Serpell, 1986, vi). Despite several recent studies, there is still a lack of archaeological investigation into this area, specifically into species other than the predominant *Canis lupus familiaris* and *Felis catus,* such as rabbits, red squirrels and birds, whose popularity is documented in the surviving literary evidence (Power, 1988, 305). In order to address this gap in the existing research, it is first necessary to explain some key terms that will feature heavily in this dissertation.

Definitions

Pets

Pets are tame animals that have been selected by humans, often in the animal's infancy, to be kept for pleasure and companionship. They are often treated in an indulgent way, and will often be given collars to wear and luxury foods to eat (Walker-Meikle, 2012, IX). They live a privileged existence: they are lavished with attention, given names, specialist foods, toys, and usually live inside their owner's home, often being allowed inside domestic spaces that have restricted access for non-family

members; for example the pet may be allowed to sleep on their owner's bed (Serpell, 1986, 12).

Although people have kept companion animals for a significant portion of our human past, it is important to take into account that the term 'pet' did not actually come into use until the early sixteenth Century and prior to this, the contemporary literature usually referred to companion animals by their Latin species name (Spitzer, 1950, 533-4).

Companion animal

This is another term for a pet, developed in the 1970's it refers to an animal kept purely for companionship and pleasure (Haraway, 2011, 12). Although the terms 'companion animal' and 'pet' do not have archaeological relevance as they both developed after the Medieval period, considering that the human/animal relationships featured in this dissertation were maintained for the purposes of pleasure and companionship and that for the purposes of this dissertation it is necessary to define these relationships, both are used throughout this dissertation.

Working animals

These are domestic animals that can be kept or used for labour, for example horses or draft cattle used to pull a plough or cart. Horses and dogs bred specifically for hunting will be included in this category, since these animals were usually kept outside of the home in purpose-built quarters (Woolgar, 1992, 416-7), and this dissertation is assessing companion animals that lived in close quarters with their owners.

Domestic/ Farm Animals

These are animals that are kept for their milk, wool or meat: this category includes dairy cows, sheep and chickens or animals kept for draft, such as horses or cattle (SCVD, 2007).

Food species

Food species are domesticated animals that are kept primarily for food, e.g. cattle, chickens or rabbits, although in rare occasions an individual from a food species may function as a companion animal and may not be eaten, but this is usually an exception to the rule (Russell, 2011, 263; Haraway, 2003, 14); for example my aunt who has a pet sheep. However, this is not universal and the concept of a specific species being used for food or companionship does not hold worldwide: for example cows are sacred in some parts of India, but the consumption of beef is normal in most of Europe and North America (Serpell, 1986, xiii).

Pets and their Place in Modern Society; is there any similarity here to how medieval pets were treated?

Pet ownership is a widespread global practise; as of 2013, an estimated 45% of British households (13 million) own at least one pet (PFMAa, 2013), with 22 million pets in the UK alone (PFMAb, 2013). Although today pets are seen as companions and 'members of the family', legally speaking, pets are still regarded as commodities and a possessions belonging to their owners in Britain (Marshal Thomas, 1996, p.x). However, pet-keeping is hardly a Western phenomenon as it pre-dates Western civilisation: pets have been part of human society for thousands of years, perhaps even

predating the Paleolithic era. The first known example of a possible human/pet burial is from the famous grave at Ein Mallaha in North Israel dating from 12,000 years BP (Figure 1), which contained the burial of an elderly human of unknown sex resting their hand against a 3-5 month old articulated puppy (Davis and Valla, 1978, p.608; Clutton-Brock, 1995; Enders-Slegers, 2000, p.237).



Figure 1: The Natufian skeleton with puppy indicated by arrow (Davis, 1978).

Why do people keep pets?

In order to adequately address this research question, it is first necessary to explore the motivations for pet-keeping:

- To provide companionship for the owner, especially if they live alone or have a solitary occupation, e.g. clergy or the elderly (Spear, 2005, 143; Johnson, 2009, 21).
- Pets can be used to teach responsibility and empathy to a child and have been argued to be part of a child's 'emotional education' (Melson et al, 1991, 55).
- Pets can be taught to perform tricks to entertain their owner (Walker-Meikle, 2012, 14).
- Can increase security by serving as an early alarm system and discourage burglaries, especially if the pet can be noisy or vicious (Johnson, 2009, 12).
- Pets can be status symbols, especially if they are expensive, rare, or an unusual colouring (Spear, 2005, 143).
- Traits associated with the animal may form part of the owner's social identity; e.g. pit-bulls are considered fierce and intimidating, and prospective pet owners may want to emphasise these qualities (Sanders, 1990, 662-3; Molloy, 2011, 121).
- Pets can be trained to help elderly or disabled people as assistance animals e.g. guide or hearing dogs (Tedeschi *et al*, 2010, 491).
- People grew up with companion animals and became accustomed to having pets around; Johnson argues that "growing up with animals seems to make people desire them in our adult lives" (2009, 59)

Issues with distinguishing Companion Animals from Working Animals

It is necessary to take into account that in some cases an animal can be both a companion animal and a working animal, although it may not necessarily be regarded as such and these roles are not always so clearly defined (Sykes, 2014, 143). Gilhus criticises the assumption that petkeeping in antiquity was identical with the concept of modern pet keeping (MacKinnon, 2010, p.293); it is unlikely that this was the case. While there may be some similarities, MacKinnon argues that "The line between 'pet' and 'work animal' may certainly have been blurred in antiquity" and that sheep dogs, hunting dogs and guard dogs may have performed multiple roles (2010, p.293). In addition to their role as a companion animal, animals may also 'earn their keep' or contribute to the running of the household by performing a useful function for their owner, for example, pet dogs are generally regarded as increasing the security of a household because of their barking, as the attention it attracts discourages burglars (Neel and Taylor, 2000, 49). Small pet dogs may also have hunted rats and mice (Sykes, 2014, 143); a role they often fulfil today (although distinguishing between lap dogs and small dogs kept as ratters may be difficult archaeologically). As for cats, in addition to their role as a companion animal, they are often kept as mousers to rid the home of vermin (Poole, 2014, 865). For example in the case of the 'cattus' that was fed cheese from Cuxham manor's 1293-4 household accounts, it seems likely that this animal was a pet, as the owner of a working animal would likely not bother to supplement the cat's diet unless the animal also held some sentimental value to the owner (Grey, 1990, 193). This may mean that the cheese was bought as a treat for a cat whose main role was as a mouser, or that the pet cat simply also liked to catch mice. Either way, the cat still appears to have been favoured for performing a useful function for the

household. Other more unusual companion animals such as ferrets could also function as vermin-deterrents (Dembeck, 1965, 364).

Human/animal relationships can become famous for the animal's loyalty, for example the well-known Welsh folktale the 'Tale of Gelert', a variation on the 'faithful dog' folktale archetype. I would argue that while Gelert's original role (and likely the main reason that he became favoured by his owner) was as a skilled hunting dog, his presence in the domestic sphere and his status as a favourite combined with his familiarity with the prince's baby son would suggest that he was also a companion (Alexander, 2005). Although the tale is fictional, it is included as an example of how animals may have fulfilled dual roles in the past: it is possible that once favoured hunting dogs became elderly and could no longer hunt, they may have fulfilled more of a companion animal function.

Are pets and food animals necessarily mutually exclusive?

From a modern perspective domestic animals tend to only fulfil one role: food species, working animal or pet. For instance, dogs are not usually eaten in Western society because of their role as companion animals and the consumption of dog flesh is normally viewed with revulsion, while in the Near East its consumption is perfectly acceptable (Serpell, 1986, v). The same applies to rabbits: most people in the UK would not consider rabbit meat a viable source of food, and demand is low (Harper Adams University, 2011). Since childhood I have had a succession of pet rabbits. As a result of these pets' impact on my life and the bond I shared with them, the prospect of eating

rabbit meat disgusts me, even though I know that rationally it is perfectly edible and as nutritionally valuable as chicken.

Companion animals or Court Jesters: the role of monkeys and apes in the Middle Ages

Although Walker-Meikle argues that monkeys and apes were popular high-status pets (2012, p.55), I disagree with this statement. The majority of monkeys and apes do not appear to have been given the same amount of mobility as other companion animals, since in the contemporary imagery they were almost always shown wearing collars and chains, often being chained to heavy blocks of stone which limited their movement (Walker-Meikle, 2012, p.14). They were also often displayed prominently by windows for passers-by to observe (Bourgain, 12), and as expensive, imported animals, they were status symbols for their rich owners (I would argue more so than other species of companion animals). They were also treated as a sort of humanoid court jester, and there was a large element of the monkey or ape entertaining their owner, since they were considered amusing and trained to perform tricks and somersaults (Walker-Meikle, 2012, p.14). There was a master of the king's bears and apes in the Medieval and Tudor periods, and the apes (probably barbary macaques but this is unconfirmed) were used for entertainment in the baiting arenas, although they were likely not usually baited themselves due to their rarity (O'Regan, 2015, personal correspondence; Wood, 1999, 108). In this way monkeys and apes were similar to menagerie animals, as they were display animals, but they were also baited and used as entertainment (HRPTOL, 2014; Wood, 1999, 110).

Monkeys and apes do not appear to have enjoyed the freedom which typically characterises pet animals. Squirrels, for instance, were restrained with collars and chains and kept in specialist hutches when they were not with their owner, but they also had far more freedom of movement and were allowed into their owner's personal space, so they could follow them around, sit in their lap or at their feet and interact with people in ways that a chained primate could not. In fact, I would argue that the cages used for birds and the hutches used for squirrels were not necessarily used to restrain the movement of these companion animals but for their own protection against larger household animals such as cats and dogs, as in John Skelton's poem 'the Ode of Philip Sparrow', when Jane Scrope's pet bird Philip was killed by a cat whilst she was boarding at Carrow Abbey (Stockard, 2015, 5). The chains and leashes used for pet squirrels were to prevent the animal from escaping and from leaving its owner's personal space, whereas it seems likely that the chains used for apes and monkeys may have been used to keep the pet at a safe distance, to prevent it from damaging the owner's property or escaping, as a cage large enough for a monkey may have been impractical in most homes.

The species that are included in this dissertation (squirrels, rabbits, hares, parrots and jackdaws) are all small animals and birds that are unlikely to cause any significant injury to their owners, bar the occasional bite or scratch, which any pet owner knows is a general hazard of living with pets. Monkeys and apes, however, are larger and stronger animals that can and do cause significant harm to humans: in his *De animalibus*, Albertus Magnus warns that the monkey "Sometimes strangles unguarded boys, sometimes hurling them off a height" (1999, 1534-6). This is an accurate warning: modern primate pet owners report unprovoked attacks from their pets, with

the animals mauling people or animals (Smith *et al*, 2012, 3). Once these animals become sexually mature, they are prone to aggressive dominance displays, and may attack their owners in an attempt to establish a hierarchy, which is a natural wild behaviour (Mott, 2003). According to Truitt, from the Primate Rescue Center, it is impossible to fully train instinctive behaviours out of these animals and they may still attack people: "Primates are wild animals; no amount of surgical mutilation, training, or beating will ever change that"(Mott, 2003). As Kevin Wright, a veterinarian at the Phoenix Zoo in Arizona, explains: "If you try to keep them as pets you're creating a mentally disturbed animal in 99.9 percent of the cases. The animal will… end up with a lot of behavioral traits that are self-destructive", such as attacking their owners (Mott, 2003), and the RSPCA advises that "Some exotic species, such as primates, should never be kept as pets as they have complex needs that can't be met in a home environment" (2016). In addition to these behavioural issues, monkeys and apes also carry diseases such as herpes B, which is transmitted via bites and scratches and can be fatal to humans (*Pickering et al*, 2008, 878). I would argue that the medieval practise of chaining them to blocks may have been undertaken due to safety concerns, in case these animals attacked their owners or vulnerable family members such as children. As a consequence of these methods of restraining their primates, many Medieval monkey and ape owners may not have been as emotionally close to their animals as pet owners with companion animals such as squirrels, rabbits or birds. For these reasons, primates are not included in this dissertation.

Chapter Two: Literature Review

The evidence used in this dissertation will be mainly literature-based, including letters, bestiaries, ethnographies and excavation reports. Other sources that will be discussed include small finds, figurines, art, and iconography.

It is important to take into account that under normal circumstances, evidence for pet-keeping would not be looked for by excavators, and would likely not survive or not be visible in the archaeological record, so this chapter will concentrate on the literature that proves the existence of pet-keeping in these periods to compensate for this lack of information.

Pet-Keeping in the Historical Literature

It is clear from the literature that people in the past were fascinated by animals; there is copious Roman and Medieval European literary evidence to support the practise of pet-keeping from both the Roman period and the Middle Ages (600-1485CE). The Roman and Medieval literary evidence shows that high-status pet-keeping was commonplace, although aside from 10th century laws of Hywel Dda, which mention lapdogs, there is very little literary evidence for pet-keeping in Anglo-Saxon England (Crabtree, 2013). Despite a large amount of surviving material referring to the practise, unfortunately both the Roman and Medieval literary evidence only really refer to high-status pet-keeping, leaving us in the dark with regards to pet-keeping amongst the lower classes.

Although pet-keeping practises in the West are often associated with wealth, decadence and sentimentality, Serpell's research has shown that numerous hunter-

gatherer societies do keep companion animals, thus proving this stereotype incorrect (1986, 53+57). I would take this point further and argue that if tribal hunter-gatherer societies indulge in pet-keeping then it is likely that pets were kept in all levels of society, including by non-elites (although unfortunately the prevalence of low-status pet-keeping is currently unknown).

Although there are many reasons pet owners give for choosing to own a pet, the three main factors that enable a person to keep a companion animal are excess food, time and space (RSPCA, 2014), and it is likely that this remained the same in the past. Unfortunately, if people of low social status did keep companion animals, then this will not be visible due to the bias in the literature (although absence of evidence does not equate to evidence of absence and the practise may have been widespread). However, it is questionable if any literature on lower-status pet-keeping ever actually existed, as these sections of society would have been illiterate so it is unlikely that would have recorded their pet-keeping habits (or lack thereof). In addition to this, since the literate upper-classes did not tend to be terribly interested in documenting the habits of their social inferiors, it is highly unlikely that low-status pet-keeping was ever documented, if it took place at all. So evidence for this practice would be dependent upon the archaeological record.

Roman

Pet-keeping is famously depicted within Roman poetry: the poets Catullus (c.84-54BCE), Meleager (1st Century BCE), Ovid (43-c.18BCE) and Martial (45-104CE) all wrote about pet/human relationships. Pliny the Elder's Natural Histories (Books VIII-X)

consist of encyclopaedic entries for various animals, focusing on the traits of different animals and anecdotes about their species. It is a useful source as it documents Roman social attitudes towards many different species. This is important because social attitudes towards animals would have significantly impacted on pet-keeping practises: if an animal was generally considered unclean or undesirable, people would have been unlikely to have kept that species as a pet. For example, Pliny considered the owl to be a “monster of the night” and a “direful omen” (Book X, Chapter 16), so it is clear that particular species with its association with ritual uncleanliness, cot-death and drinking human blood was not going to be a popular Roman pet (Stephens, 2003, 280;Ovid, 131-45).

Anglo-Saxon (420-1066CE)

Unfortunately, there is currently very limited literary evidence for pet-keeping in Britain during the Anglo-Saxon period (Crabtree, 2013). Animals are featured in literature and art, but these sources do not address pet-keeping, with the exception of the 10th Century Welsh laws of Hywel Dda, which describe different types of dogs, including several working dogs and lapdogs (Clutton-Brock, 1976, 386).

However, so far the skeletal evidence seems to suggest that the majority of animals were kept as working animals, since the smaller breeds of dog that were popular in Roman Britain as lapdogs no longer appear to be present in Early Anglo-Saxon East Anglia (Crabtree, 2013, 979). Analysis of the dog skeletons from the East Anglian sites of West Stow has been interpreted by Crabtree as the functional disposal of working animals, because it mostly consisted of partial skeletons with missing elements and

their remains do not appear to have been afforded the careful burial treatment that we might expect to be given to pets (2013). However, by the Late Saxon Period (850-1066CE), smaller dogs are once again present in East Anglia skeletal assemblages and Crabtree argues that these may have been Late Saxon lapdogs (2013). Unfortunately, there is a geographic bias in the data towards the presence of smaller dogs in East Anglia as so far new research covering a wider geographical area has yet to be published and evidence for other species of companion animals in Anglo-Saxon Britain is severely limited. One possible pet is a Mid-Late Saxon cat from Bishopstone, East Sussex, as the isotope analysis showed that it had been regularly eating large amounts of fish (an elite food during this period) whereas two other cats from this site had carnivorous diets, suggesting that the fish-fed cat with its elite diet may have been a companion animal (Marshall et al. 2010; Poole, 2014).

Medieval

Medieval opinion on animals had a tendency to echo Classical sources, and Medieval Bestiaries tended to echo the attitudes to animals found in Latin translations of the early Christian *Physiologus* (c.2nd-4th Century AD) text and Pliny's *Naturalis Historia,* which hugely influenced medieval thought (British Library, n.d.). The Aberdeen Bestiary (c.1200CE), is also a valuable historical source because it details the social attitudes in the 12th and 13th Centuries towards different species of animals, some of which were kept as pets (University of Aberdeen, 2015). Despite this, it is also important to consider that some species of animals that were often kept as pets were not included in the bestiaries. Although squirrels were commonly depicted as pets in medieval imagery, but written references in the bestiaries are more scarce: both the

Ashmole and Aberdeen bestiaries do not include any written description of squirrels within the texts, although they do feature in bestiary illustrations in the Aberdeen Bestiary (Clark, 2006, 240;Aberdeen Bestiary, n.d., F2V).

Some of the medieval literary sources that most frequently mention pet-keeping are high-status household accounts from the 13th-15th Centuries. These often detail expenses regarding animal purchase and transport costs, documenting the movement of companion animals as gifts between elites. The nobility did not usually purchase companion animals for themselves, instead they were chosen as gifts for others. The most common method amongst the upper classes of acquiring a pet was to be gifted with one: companion animals were often given to lovers as a gift, for example in Gottfried von Strassburg's 13th Century courtly romance *Tristan*, Tristan gifted his lover Isolde with a pet lapdog (Walker-Meikle, 2012, 26). Mentions of purchasing pets are unusual in household accounts (Walker-Meikle, 2012, 26), although high-status household accounts often detail purchases such as bird-cages or collars as well as pet food expenses: Isabeau of Bavaria often purchased luxury items for her companion animals, including a collar decorated with pearls and fastened with a gold buckle for her pet squirrel and green cloth covers for her parrot's cage (Walker-Meikle, 2012, 52). However, there is also a status element to these purchases as they are clearly luxury goods and a form of conspicuous consumption, signifying the economic status of the animal's owner.

Analysis of the assorted literary evidence shows that medieval pet-keeping was most popular among women and members of the clergy (Melson, 2009, 26). In the iconography rich secular women are often depicted with their pets, although images of clergy with pets are rare (Walker-Meikle, 2012, 68). However, there are large surviving

amounts of literary evidence (such as letters) written by members of the religious orders that document the pet-keeping habits of the clergy and how this impacted life in these institutions (Power, 2012b, 90), the majority of which are in the form of complaints against pet-keeping or rules forbidding the practise. Typically, Bishops and Church authorities considered companion animals as detrimental to discipline, as nuns sometimes took pets to church with them, and repeatedly "for century after century tried to turn animals out of convents without the least success" (Power, 2012b, 90), since it appears that pet-keeping may have been endemic amongst female religious orders. The Bishops also had to enforce these rules with prioresses and abbesses, who, Walker-Meikle argues, often believed it was their “right” to keep a companion animal despite pets being forbidden by Church authorities (2008, 69). Some were even as brazen as Villarceux’s ex-prioress, Eustachia, who apparently did not hold back when told to get rid of her noisy pet bird by the greatly displeased Archbishop of Rheims in 1268 (Rouen, 1852, 602).

Issues with Identifying Pet-keeping in the Historical Literature

The term ‘pet’ only came into use in the 16th Century to refer to companion animals, prior to this, it was the norm to refer to companion animals by the Latin moniker for their species (Spitzer, 1950, 533-4). Unusual or exotic non-native species are easily visible as pets but this complicates matters for the researcher because in cases where the pet is not an unusual or rare animal, it is necessary to gauge the amount of affection that was bestowed upon the animal and how it was treated to ascertain whether this individual was a companion animal or not, which can be problematic.

There is also an understandable difficulty of researching pet-keeping when the term "pet" had not yet come into usage; this makes it more complicated for the researcher to distinguish between working animals and companion animals. It also means that the researcher would have to gauge how emotionally significant the animal was and if it was subject to any special treatment (such as specialist foods or expensive accessories e.g. elaborate collars) that would indicate that this particular animal was kept as a pet. In order to do this, it is necessary to analyse the terminology used to describe that animal and ascertain if it was given a name or if positive emotive language like "tame" or "affectionate" was used when referring to the animal, which may suggest that the animal was a pet. If this information is not available in the historical sources, then some companion animals will unavoidably slip through the net and be missed, although rare or exotic animals would obviously be more visible due to their rarity (Holmes, forthcoming; EH, 2014, 5), especially if that species does not usually show up in the literature for that period and so their presence would likely be automatically questioned.

Current Archaeological and Historical Research on Pet-keeping

Before the 1970s pet-keeping was not seen as worthy of academic study (Podberscek *et al*, 2000, 1). However, in the last three decades this attitude has changed significantly and the study of pets is no longer regarded as "heresy" or part of the "lunatic fringe" but as an area of valuable academic study in its own right, in both archaeology and anthropology as well as in many other disciplines including biology and history (Podberscek *et al*, 2000, 1; Sykes, 2014). As a result of this trend, more multi-disciplinary work has been undertaken in the last decade and this area of

research appears to be gaining momentum. An excellent example of this type of multidisciplinary work, is Podberscek, Paul and Serpell's book, *Companion Animals and Us: Exploring the relationships between people and pets*, which includes numerous chapters on pet-keeping by different authors, encompassing archaeological, anthropological and historical research (2000).

Serpell's 1986 book, *In the Company of Animals: A Study of Human-Animal Relationships* was one of the first significant contributions to this area of research, and as Serpell explained, prior to that publication "almost nothing had been written about it, and there had been few, if any, scientific studies" on the area of pet/human relationships (vi). So far, there has been no comparison of Roman and Medieval pet-keeping habits and pet/human relationships, which is unfortunate, since Classical attitudes to animals strongly influenced Medieval thought and pet-keeping habits, both in the Early Modern Period and beyond (British Library, n.d.). This dissertation aims to address this gap in the research, as pet-keeping is an area of zooarchaeology that has sadly not been given as much attention as it deserves, and has much new information to contribute to the discipline, especially because companion animals species such as squirrels, rabbits and primates are currently under-researched in zooarchaeology, so this dissertation will be a new original piece of research in its own right.

Both Serpell and Walker-Meikle's works are highly influential in the field of pet/human relationships, however, the former trained as a zoologist and the latter as a historian, and this dissertation aims to give an archaeological perspective on the issues raised by their research. While *Companion animals and us* does address archaeological issues and includes chapters such as Bodson's 'Motivations for petkeeping in Ancient Greece

and Rome' and Erikson's 'The Social Significance of pet-keeping among Amazonian Indians', as a multidisciplinary work the other chapters are split between veterinary science, psychology, pet-therapy and ethics, and there are still many questions that need to be answered in the field of pet/human relationships within zooarchaeology. Unfortunately, a comprehensive zooarchaeological investigation into pet-keeping and human/animal relationships in Medieval Britain (and not as merely a small part in a larger work) has yet to be written. Only in the last two decades has research into pet/human relationships began, and only within the last ten years have the valuable interdisciplinary research collaborations began. Sadly, this kind of work is still rather sparse and more research into this area is necessary.

The main sources for this dissertation are Walker-Meikle's 2008 doctoral thesis 'Late Medieval Pet Keeping: Gender, Status and Emotions', which was the first broad overview of pet-keeping in Medieval Western Europe, and her 2012 book 'Medieval Pets'. Walker-Meikle's work is unusual as it focuses purely on Medieval pet-keeping habits and the different species that were kept as companion animals during this period: as she explains "Pets and their upkeep are mentioned occasionally in the secondary literature, but little space has been dedicated to the practise of pet keeping itself" (Walker-Meikle, 2012, ix). Walker Meikle's *Medieval Pets* does include some archaeological evidence (in the form of several small finds, which include a monkey draughts piece, a painted tile and 2 engraved gold rings depicting a squirrel on a chain and a sleeping dog on a chain – all of the other imagery is stained glass, illustrations or paintings), but she does not attempt to fully integrate this with the literary evidence. Neither does she provide any archaeological evidence for artefacts used or worn by pets, such as cages or collars, although the literary evidence she uses frequently

mentions these types of items, but since this is a primarily a historical work, this is not surprising. In addition to this, Walker-Meikle focuses solely on higher-status pet-keeping, and fails to consider that pet-keeping may have taken place in poorer households. Admittedly, using only one author for the main sources of a dissertation is not ideal, but due to the scarcity of research in this area, it was unfortunately not possible to locate any additional main sources.

Sadly, research into pet-keeping usually only includes a small section discussing pets, as part of a larger work on animals. English Heritage's 2014 publication 'Animal Bones in archaeology guidelines for best practise' has been selected to as an example of this research bias in the archaeological literature: out of a 64 page English document devoted to animal remains, only one very small combined paragraph titled 'Pets and Pests' addresses the identification of companion animals in the archaeological record (EH, 2014, 5). (Please note that this is not intended as a criticism of this work, but as a way to demonstrate this gap in knowledge and to hopefully encourage future research into this area of zooarchaeology). However, more recently more space has begun to be devoted to these themes in larger works, as can be seen in Holmes' 'Southern England: A Review of Animal Remains from Saxon, Medieval and Post Medieval Archaeological Sites' (forthcoming).

The two companion animals that have been subject to the most modern detailed archaeological study are dogs and cats (Morey, 2010, xix; Driscoll *et al*, 2009, 9973;Walker-Meikle, 2013). These are the two most common pets in the Western world and since these are the two animals most often associated with pet-keeping in the Western worldview, more funding and attention tends to be granted to studying these species (Driscoll *et al*, 2009, 9973). Other species of companion animals that are

less commonly kept as pets in West Europe and North America, such as birds, monkeys, rabbits or squirrels, are not given as much attention and are consequently under-researched.

This is due to the fact that dogs and cats are commonplace household animals and are therefore better-represented in the archaeological record. Lapdogs, for example, which were popular pets in both Roman and Medieval societies, are more easily visible archaeologically than other species of pets because of their diminutive size and shorter limbs when compared with hunting dogs (Crabtree, 2013, 979). This is one of the main reasons why this topic has been focused on by researchers as it is less problematic to compare different types and sizes of dogs, especially lap dogs and hunting dogs that have such an obvious discrepancy in size. However, there are some issues with the assumption that all diminutively-sized dogs from these periods were lapdogs: small dogs were also kept as ratters, and these are difficult to differentiate from lapdogs in the archaeological record (Sykes, 2014, 132).

Other species of pets are less visible archaeologically: It is clear from the imagery and literature that high-status medieval women often kept squirrels as pets (Walker-Meikle, 2012, 48), but pet squirrels are rarely considered in archaeological research. This is probably because they are a native wild species so if squirrel remains were found on a high-status British site, then there is a high possibility that the pet squirrel would be overlooked since the presence of native wild species in an assemblage is not unusual, rendering it archaeologically invisible.

Chapter 3: Comparing different species of companion animals

This chapter will discuss Medieval pet-keeping habits and social attitudes towards red squirrels, the European rabbit, parrots and jackdaws. This chapter will consist of an overview of the literary and iconographic evidence for these species and their non-utilitarian functions as companion animals, whilst also contrasting social attitudes towards these animals and discussing how classical thought may have influenced the status of these species as pets. Typically, Medieval attitudes to animals tended to echo Classical sources, especially Pliny's works, since his *Naturalis Historia* hugely influenced medieval perceptions of the natural world. In turn, stereotypes about animals originating in the Classical world also strongly influenced the species that were kept as companion animals during this period.

During the Middle Ages, lapdogs were the most common species of companion animal, but other exotic animals (such as parrots and monkeys) became more widespread as companion animals by the Late Medieval Period (Sykes, 2014, 146). Songbirds or other species of birds that could mimic human speech, such as parrots and jackdaws, were very popular, while rabbits and squirrels were less widespread (Walker-Meikle, 2008, 21), although rabbits and songbirds were popular pets with nuns (Walker-Meikle, 2013, 14). Interestingly, all of the well-known companion animals belonging to nuns in the literature came to untimely or nasty ends! (Power, 1922, 590).

Pets can be easily distinguished in the iconography by their closeness to their owner (since they are commonly depicted sitting at their owner's feet or carried in the arms) and by their accessories, which include leashes, hutches, birdcages and elaborate jewelled or belled collars, the last of which was unique to companion animals (Walker-Meikle, 2008, 37). These delicate belled collars were noisy and impractical, and so

would not be worn by working or high-status hunting animals, which typically either wore plain, functional collars or remained uncollared (unless they were horses, which had elaborate harnesses and tack) (Walker-Meikle, 2008, 37).



Figure 2: A man trapping Squirrels using a net, c.1465 (TMLM, MS M.0820, fol.052v)



Figure 3: Earthernware lead-glazed floor tile showing a queen holding a squirrel c.1290-1300 (British Museum, n.d.).

Red Squirrel

Also known as the Eurasian red squirrel (*Sciurus vulgaris*), red squirrels are arboreal, omnivorous rodents. They are skilled climbers, inhabiting both broadleaf and conifer woodland and are a native British species; red squirrels have been present on British archaeological sites since the end of the last Ice Age (Lurz, 2010, 12). They are naturally wary of humans (Link, 2004), so if red squirrel bones were found at urban sites then humans would have to be responsible for the presence of that species as they do not naturally live in highly-populated areas (regardless of whether the animal had been used for meat, fur or kept as a companion animal). However, if they are caught young, then they can be tamed and kept as pets, although they are known to chew their way through wooden cages (Grier, 2006, 42).

Squirrels were hunted using nets or blunted arrows, which were used to shoot the animal down from the trees (*Figure 2*) (Pluskowski, 2015, 155). Squirrel fur was one of the most desirable furs, second only to mustelids (Pluskowski, 2015, 154), and Medieval sumptuary laws dictated that red squirrel fur was only to be worn by middling and lesser nobles (Hoffmann, 2014, p.189): Siberian grey and white squirrel furs, known as 'vair', were restricted to nobles (Yarwood, 2011, 186). The Hanseatic merchants exported squirrel skins from the Eastern Baltic, where the majority of Europe's squirrel furs were sourced from, which were then shipped to Venice, Belgium or the Netherlands to be made into clothing (Hoffmann, 2014, 189).

In addition to their status as animals prized for their fur, we know that red squirrels were often kept as pets since images of rich Medieval ladies accompanied by squirrels were commonplace in Medieval art (*Figure 3*); they were usually depicted wearing tiny collars, often with an attached long chain or leash so that they could not climb too far

away from their owners (*Figure 4),* otherwise they were held in the owner's arms or play at their feet (Walker-Meikle, 2012, 48). When not with their owners, pet squirrels were kept in hutches, which they were sometimes chained to (*Figure 5*) (Walker-Meikle, 2012, 51), although they were known to chew through wood so it may have been necessary to reinforce or replace these regularly (Grier, 2006, 42). There are a number of references to pet squirrels in upper-class household accounts, which detail the purchases of cages and pet accessories, such as collars and chains. They also feature in letters written by church officials, which are often complaints or attempts to impose limitations on pet squirrels or ban them entirely (they are usually included in lists of different species of banned pets). The French Queen Isabeau of Bavaria's household accounts detail the purchase of a collar with a gold buckle and decorated with pearls for her pet squirrel (Walker-Meikle, 2012, 52). The literature is clear that pet squirrels wore collars and chains, so if squirrels are depicted with collars and chains in the iconography then we can be relatively certain that these were pet animals. As with all medieval pets, it is uncommon for the names of pet squirrels to be mentioned in the literature, although the French generic name for a squirrel was Fouquet so this may have been used (Walker-Meikle, 2012, 16).



Figure 4: 15th Century gold finger-ring: the interior has incised decoration showing a woman holding a pet squirrel on a lead (BM, n.d.).



Figure 5: Squirrel Chained to Hutch c.1382-1394 (Book of Hours, Lat. liturg. f.3, fol.74r).

According to Medieval bestiaries, the red squirrel was thought to be greedy and lazy, as its habits of hoarding food and hibernating during the winter-months were misunderstood: it was thought that the animal's tendency to sleep for a third of the year signified its laziness (Heck and Cordonnier, 2012, 506). During the Early Middle Ages, greed and laziness were traits primarily associated with monkeys or apes, but Heck and Cordonnier argue that the squirrel, as a small tree-climbing tailed mammal

that somewhat superficially resembled the monkey, was tarred with the same brush and thought to share these attributes (2012, 530). However, the Medieval view of squirrels was not entirely negative and squirrels were also thought to be affectionate companions: part of Jonas of Bobbio's biography recounts how Saint Columbanus would let squirrels jump down from the trees to rest in his cowl (Intangible Heritage, n.d., 20).



Figure 6: A lady holding a pet squirrel, from the Ormesby Psalter (Bodleian Library MS. Douce 366).



Figure 7: A lady with a pet squirrel, c.1320-1340 (Luttrell Psalter Add MS 42130, f.33r).

The trend amongst rich ladies for keeping pet squirrels continued into the 16th Century, and these animals feature in a number of wealthy ladies' portraits during that period (*Figure 8),* although they experienced a sharp drop in popularity in the 20th Century and are nowadays only rarely chosen as companion animals (Dubey *et al*, 2006, 658). Modern owners of pet squirrels do report that unintentional scratches are very common for squirrel-owners, but this is due to the animal's natural climbing behaviours and sharp claws (Dan, 2008). Red squirrels are still kept as pets today, although this habit is not widespread by any means and most of the pet squirrels are usually Eastern grey squirrels (*Sciurus carolinensis*), as these are now the dominant type of squirrel in Britain and most of Europe (Lever, 2009, 27).



Figure 8: 1526 Hans Holbein the Younger 'Lady with a Squirrel on a chain' (National Gallery, n.d.).

European Rabbit

Identification between rabbits and hares can be difficult, both in imagery and with skeletal remains. The European rabbit (*Oryctolagus cuniculus*) and the European hare (*Lepus europaeus*) are separate species, but despite a number of physiological differences it can be difficult to distinguish between the two in iconography, especially in the bestiaries, where the anatomical accuracy of the illustrations can be severely variable and similar colours are often used for both species (George and Yapp, 1991, 64). They are superficially similar, with large ears and strong hind legs, and it is possible to misidentify them, although hares do have larger ears, are longer-lived and generally have a higher body mass (Wingert, 1999; Harkness *et al*, 2013, 23-25).

The European rabbit was originally a species native to Britain, with rabbit bones being found at the Mid-Pleistocene sites of Boxgrove and Swanscombe in Kent, although most academics agree that wild rabbits seem to have died out shortly after this as they are not present during the Neolithic, Iron Age or Anglo-Saxon periods (Lever, 2009, 57). Rabbits have been kept for meat and hunted with ferrets since Roman times and rabbit meat, specifically that of embryos, was considered a delicacy by the Romans (Huey, 1994, 54; Pliny, Book 8, 81), but previously it was thought that rabbits were not present in Roman Britain at all (Williamson, 2007, 11). Williamson does argue that the Romans may have re-introduced rabbits in small numbers for their meat (with any escapes insufficient to establish a viable wild population) (2007, 11), although this interpretation is controversial. Clutton-Brock maintains that rabbits most likely did not reach Britain until they were brought by the Norman elites post-Conquest (1999, 181). However, Lever disagrees with this interpretation, and argues that they were not reintroduced to Britain until the late 12th Century, albeit only in small numbers, then spread across the

country and became widespread in some areas by the mid-13th Century, with the population having grown significantly by the early 14th Century (Williamson, 2007, 12; Lever, 2009, 58). More recently rabbit bones have been found in some securely dated Roman contexts, at Beddingham, East Sussex and Lynford, Norfolk, with the latter showing butchery marks (Wiliamson, 2007, 11), but prior to this all rabbit bones believed to date from this period were from insecure contexts or attributed to modern burrowing (Williamson, 2007, 11).



Figure 9: Two Rabbits c.1350 (Koninklijke Bibliotheek, KB, KA 16, Folio53r).

Rabbits were also not included amongst the livestock of the 1086 *Domesday Book*, which implies that they were not present in England during this period (Lever, 2009, 58). The earliest known medieval rabbit bones are from Ipswich and Rayleigh Castle, Essex and are thought to date from the 12th Century and the late 12th/early 13th Century respectively (Lever, 2009, 58-9). By the early 14th Century they began to feature in illustrations (*Figure 9*). In late 13th-14th Century England, rabbits appear to have been relatively difficult to get hold of, costing around 4-5 times the price of a chicken, which was more than a workman's daily wage (Rackham, 1986, 48). Veale argues that they were considered a luxury food item during this period (1959, 89).

How would people have acquired rabbits as pets in medieval Britain? It may have been easier to accustom a wild or semi-wild juvenile to humans in order to keep the animal as a pet, but it may have been difficult to initially gain access to juvenile rabbits. Since access to coneygarths was restricted to the landowners and warreners (Williamson, 2007, 26), then pet rabbits were likely restricted to elites or those who regularly interacted with rabbits. The rabbit's status as a rare animal associated with elites from the 12th Century onwards may have added to their allure as a companion animal.

Rabbit fur was used to trim high-status clothing (Williamson, 2007, 8). In Medieval England, most rabbits were the common grey variety, but silver-grey and black-furred rabbits were rarer and more expensive; Henry VII was rumoured to have night clothes trimmed with black rabbit fur (Bailey, 1988, p.12). Whilst a species is still relatively scarce, they are likely to be kept as pets due to their novelty, so rabbits may have begun to be kept as pets in England around this date. In addition to this, the rarer black or silver-grey rabbits may have been more likely to have been kept as companion animals because of their unusual colouring.



Figure 10: Rabbits in a coneygarth, c.1325-35

(British Library, Additional MS 42130, Folio176v).

During the Middle Ages rabbits over the age of one year were known as “coneys”, while the term “rabbit” was reserved for the juvenile animals (Williamson, 2007, 12). Rabbits were kept in large man-made enclosures with earthern mounds, known as coneygarths, which were later called warrens (*Figure 10*)(Williamson, 2007, 12-17). Medieval rabbit-farming was a form of intermediate livestock exploitation practised by landed elites (like deer-parks or fishponds): these rabbits were not tame animals, but they were not fully wild either (Williamson, 2007, 155). They were smoked out of their burrows, were caught using tip traps, or ferrets were released into the burrows to drive the rabbits out into nets (Lever, 2009, 60;Williamson, 2007, 16). In the early 15th Century, Blythburgh Priory in Suffolk was home to a group of Augustinian canons who were often caught poaching rabbits from their local warren: Thomas Sherman took repeat offending to such an extent that the 1425 court roll referred to him as a ‘poaching canon’ (Williamson, 2007, 26).

The practise of raising rabbits for meat is known as cuniculture, and in the Middle Ages, women were involved with the process of raising and catching rabbits (*Figure 11*) (Davis and DeMello, 2003, 154; Almond, 2011, 23+181). Foetal and neonatal rabbit flesh was often eaten on fast days, as it was not considered meat (Clutton-Brock, 1999, 182), and since this was such a significant source of food for the religious community (for which the consumption of meat was frowned upon) then nuns would have likely had multiple opportunities to interact with rabbits, which may explain why rabbits appear to have been such a popular pet with nuns (Walker-Meikle, 2012, 14). They were small, quiet animals (coincidentally easily concealed during crackdowns on pets in religious institutions). In 1387 rabbits were included in the list of pets that William of Wykeham banned nuns from taking to church services with them, describing them as “frivolous

things that promote indiscipline" (Davis and DeMello, 2003, 65). However, it is important to take into account that it was normal for secular men and women to attend church services with a falcon on their wrist or a small dog seated on their lap during this period (Power, 1988, 306).

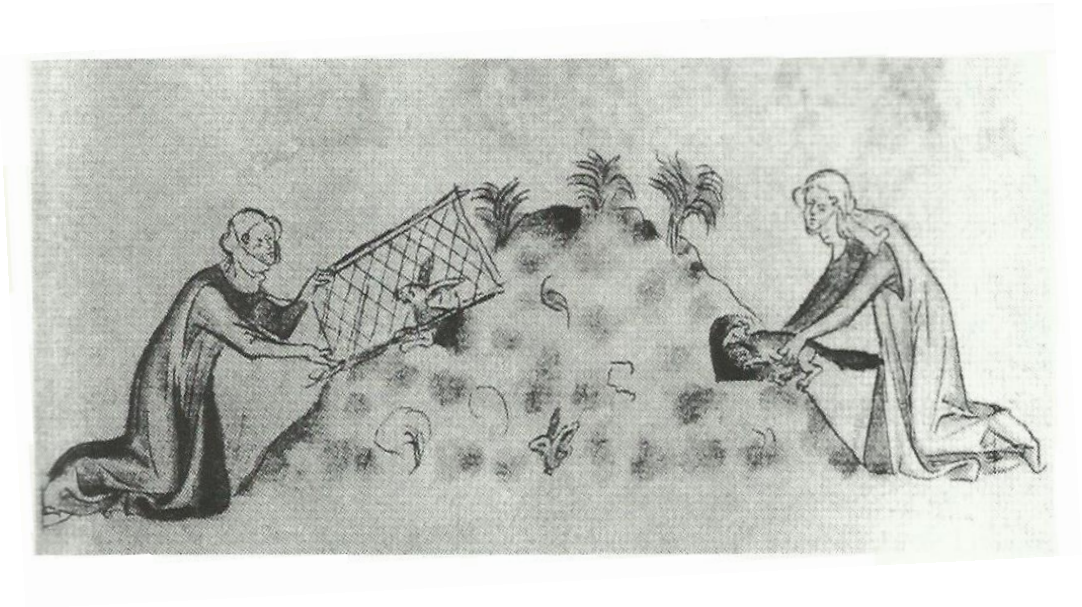


Figure 11: Two women catching rabbits with a ferret and purse net, 14th Century (Williamson, 2007, fig.2).

Songbirds

In her 2009 book *Birds*, Serjeantson explains that "There is good archaeological evidence for hawking and some for cockfighting, but the archaeozoological evidence for birds kept strictly for pleasure is less tangible, despite the fact that people must always have kept wild and domestic birds for this reason" (Serjeantson, 2009, 316). We know that birds have been popular pets since antiquity because there are large amounts of surviving documentary and iconographic evidence from Ancient Egypt, Rome and Greece (Lutwack, 1994, 151). Unfortunately, the zooarchaeological evidence

for caged birds or birds that were kept in aviaries is very limited and rarely recognised: the only unequivocal proof for the presence of caged birds would be skeletal elements on an archaeological site belonging to a species that was not native to or widely available in that country, and would therefore have to have been imported (Serjeantson, 2009, 333). Therefore the rarity of an exotic species would have made it very desirable to keep as a pet since the expense required to purchase one would have made the bird a status symbol.

Birds are one of the predominant pets in Roman literature: both Petronius and Pliny describe how birds were often the favourite companions of Roman children (Bradley, 1998, 525-527). According to Stresemann, Indian parakeets were readily available during Roman times, and were often kept as pets (1975, 25). Some species of songbirds, such as nightingales and quail were kept as pets because of their pleasing voices, whereas parrots and corvids could be taught to imitate human speech (Lazenby, 1949, 114;Werness, 2006, 105). Pliny also stated that a nightingale famed for the skill of its voice was given to Agrippina, the wife of Emperor Claudius, as a gift (Lutwack, 1994, 151-2). Nightingales that were trained to speak were apparently all the rage in the 3rd Century AD, and were so popular that Clement of Alexandria famously admonished these pet-owners for their foolishness (Lazenby, 1949, 299). Gaius Valerius Catullus' poetry (c.84-54 BC) provides valuable information about the relationship between Roman pet owners and their pet songbirds: in the 1st Century BC, when Catullus' mistress' pet bird died, the poet wrote two poems about her grief: 'The Death of Lesbia's Sparrow' and 'Tears for Lesbia's Sparrow'.

There is plenty of literary evidence to support the keeping of a wide range of species of pet birds in the Middle Ages; these included parrots, blackbirds, turtledoves, jackdaws,

thrushes, starlings, nightingales, finches and skylarks (Randall, 1953, 286; Walker-Meikle, 2012, 15). One of the best sources on medieval bird care comes from Le Ménagier de Paris "Item, let carded wool and feathers be put in the aviary to make their nests. And thus have I see turtle-doves, linnets and goldfinches lay and rear their young. Item, you should also give them caterpillars, worms, flies, spiders, grasshoppers, butterflies, fresh hemp in leaf, moistened and soaked. Item, spiders, caterpillars and such like things which be soft to the little bird's beak, which is tender" (Walker-Meikle, 2012, p.43).

Pet birds were very popular in Medieval Europe, for example, late 13th Century Paris boasted five master bird-sellers, whose wares included edible birds as well as caged birds such as parrots, starlings, nightingales and sparrows; in addition to this there were also a number of craftsmen who specialised in building birdcages for pets (Walker-Meikle, 2008, 51). Pet birds were usually kept in cages, which could be simple wooden items, or very expensive contraptions constructed using luxury materials such as silver (Walker-Meikle, 2012, 51). The purchase of elaborate cages and cage accessories for pet birds often features in surviving upper class household accounts: for example in 1402 Isabeau of Bavaria commissioned a silver cage to house her birds; she also purchased cage covers made of green fabric in 1387 and 1392 (Walker-Meikle, 2012, 52). However, despite their abundance, both Roman and Medieval literary and iconographic sources can be somewhat vague on what the precise species was or on details allowing identification to species level, as they usually prefer to mention the colour of the animal or bird. Identifying the species of a pet songbird can be difficult, for example Lesbia's passer, which is often thought to be a sparrow, may actually have been a lark, thrush or finch (Manning, 1981, 71). The original Latin term 'passer' and its

later medieval variant ‘sparrow’, were actually used to refer to any small birds until at least the early 17th Century (Yapp, 1982, 483).

Pets could also be disruptive to other people: a complaint describes how a secular resident at a convent, one Margaret Ingoldesby, kept her noisy birds with her in the dormitory, where they disturbed the nuns’ sleep (Power, 2010, 412-3). In 1387 William of Wykeham, Bishop of Winchester, banned his nuns from taking their pet birds to church services with them on the grounds that it promoted indiscipline and disrupted the service (Davis and DeMello, 2003, 65).

If any type of pets were kept at all social levels during the Middle Ages, then it would have to be songbirds, which Rockefeller argues were kept at all levels of society (2012). Native species such as sparrows and finches could be acquired easily and cheaply, would not take up too much space due to their small size, were inexpensive to feed and cages could easily be fashioned from wood or other relatively cheap materials. However, this is in direct contrast with the keeping of exotic animals such as parrots, which would have been restricted to elites because of their rarity and expense.

Parrots

Since Roman times, parrots have been favoured as companion animals because of their colourful plumage as well as for their mimicry abilities, exceeding those of corvids, which can only copy a few words and phrases, whereas parrots have a wider vocal range and can be trained to copy more complex word combinations (Boehrer, 2010, xi). In both the Roman and Medieval periods, their mimicry abilities were mistaken for the ability to speak: Aristotle claimed that the parrot had “a man’s

tongue", which strongly influenced medieval thought with regards to these birds (2013, 13). During the Middle Ages people were willing to go to "immense pains" to teach these birds how to speak (Fosbroke, 1825, 733), and parrots were typically thought to say 'Ave' (hail!) as a greeting (Martial, Epigrams, 14, 73). Conventional wisdom, based upon Pliny's advice, recommended punishment using an iron rod, since the bird supposedly had a thick very skull (Boehrer, 2010, xi). Pope Urban V's household accounts include the purchase of one of these iron rods as well as parrot cages (Walker-Meikle, 2008, 63). Parrots' beaks have evolved to chew through trees to make their nests, and so they can easily chew through wooden cages (Morrone, 2012, p.79), rendering it likely that their cages would need to be regularly replaced. According to Sir John Mandeville, the morphology of the bird's feet was also supposed to affect their disposition: those with six toes were thought to be good-natured, whereas those with three toes were bad-tempered (*Figure 12*) (1900, ch.30;TMB, 2011c).

Parrots were strongly associated with elites during the Middle Ages, although as a non-native species, the parrot was actually less easily available in Medieval Europe than in Roman times, though they were still highly prized as pets and expensive, but live parrots were only mentioned infrequently by the record-keepers (Boehrer, 2010, 23). During this period, the Indian rose-ringed parakeet (*Psittacula krameri manillensis*) was the sole member of the parrot family present in Medieval Europe (TAB, n.d., 47R;Walker-Meikle, 2008, 23-4), and these birds were known as 'popinjays' (Johnston, R., 2011, 20).



Figure 12: a parrot wearing a gold collar with bells, which implies it is a pet bird

(Kongelige Bibliotek, Gl. kgl. S. 1633 4º, Folio 33v)



Figure 13: green parrot (Aberdeen Bestiary, F47r)



Figure 14: A green and red parrot sitting in a tree

(Bodleian Library, MS. Douce 151, Folio52v)

Despite, or very likely because of, its rarity in Medieval England, the popinjay is one of the commonest birds depicted in Medieval Illuminated manuscripts, although even if it is included in the illustrations; several bestiaries including the 12th Century *Aviarium* do not even mention the *psittacus* (Boehrer, 2010, 34;Yapp, 1982, 75). It is unknown how rare these birds actually were in England, although based on the image of a parrot from the Aberdeen Bestiary F47r (*Figure 13*), and the depiction from the Bodleian Library, MS. Douce 151, Folio 52v (*Figure 14*) it is unlikely that they were not commonplace since both of the artists appear to have been unfamiliar with the bird, as the illustrations, with their elongated necks and legs bear more resemblance to a peacock than a parrot! Although they are carefully painted in the correct colours of green with a red around the neck, they may possibly have been painted this way because the only bird originating from India that the artists were familiar with was the peacock, so they may have chosen to depict their ideas of what a parrot looked like in a similar way. (Although the parrot in *Figure 12* is more naturalistic, which suggests that the artist was at least more familiar with the bird and may have previously seen a parrot or have copied the image from a more anatomically accurate picture).

Elizabeth de Burgh, the Duchess of Clarence, had two pet parrots in the late 13th Century (Walker-Meikle, 2011, 15). In the late 15th Century, Charles VIII of France's household accounts record the purchase of parrots (Walker-Meikle, 2012, 52). In medieval Romances parrots were used to carry messages, but due to their near-constant chatter and ability to mimic human speech they are often depicted in literature betraying their owner's confidence and letting slip about their varying misdemeanours. They are also portrayed as clever and cunning (Boehrer, 2010, 43). In

the Late 14th Century *Le Conte de Trois Perroquets* by Thomas de Saluces, a woman has a rendezvous with her lover while her husband is away (although her husband suspects her infidelity and leaves three caged parrots watching the entrance to her chamber, with orders to report back on her visitors) (Boehrer, 2010, 42). After her lover has left, she interrogates them: when two of the parrots mention her indiscretion she and her maid kill them, blaming their deaths on the cat. She lets the third bird live when it sensibly remains silent on the matter, and does not inform her husband of his wife's extramarital activities (Walker-Meikle, 2011, 19). Nigel Wireker, writing in the 12th Century, describes how several nuns, acting to insure their sinful behaviour was not exposed, poisoned their pet parrot, which had a habit of telling tales (Power, 1922, 593). Neckham's c.1180 work *On the Nature of Things* tells the tale of a cunning pet parrot's successful escape from his owner, he tricked him by pretending to be dead, then when he was taken outside in the hopes that the fresh air might cure the bird, the parrot flew away (Boehrer, 2010, 28).

Despite the literary evidence, so far, the earliest archaeological evidence for parrots in Britain are the two parrot bones (the coracoid and carpometacarpus) from a "middle-large sized parrot" dating to the mid-late 17th Century, which were found during the Castle Mall excavations in Norwich (*Figure 15*), although as previously shown from the literature and iconography they were present in Britain far earlier than this. Albarella *et al* believe that both bones are from one individual, and the bird was similar in size to an African grey parrot (*Psittacus*) (Albarella *et al*, 1997, 51). Unfortunately there is currently little information available on this specimen, which despite expert zooarchaeological analysis at Tring was unable to be identified to species level, although Albarella *et al* speculate that the parrot may have belonged to a rich

merchant (1997, 55). Given that this was clearly an imported, expensive exotic species, it is very likely that the Norwich parrot was a pet, although Holmes does raise the possibility that it may have been a display animal (forthcoming, 109).



Plate 47. Period 6. Parrot coracoid and carpometacarpus.

Figure 15: Parrot bones from Castle Mall in Norwich (Albarella *et al*, 1997, Plate 47).



Figure 16: Five jackdaws in a tree (Bodleian Library, MS. Bodley 764, Folio68r)

Jackdaws

Unlike the parrot, the European jackdaw (*Corvus monedula*) was a native British species, and thus far easier and cheaper to acquire since all a potential pet-owner had to do was catch and tame a young jackdaw (Johnston, 2011, 20). Jackdaws were commonplace on urban sites, primarily as scavengers (O'Connor, 2008, 170) since they are very adaptable and can survive in nearly all ecological niches, although this species originally lived in forests *(Figure 16)* (TMB, 2011b). Isidore of Seville describes the jackdaw as a "talkative bird with a rude sound" (TMB, 2011b), and they were also been criticised as "a noisy bird" (TMB, 2011b). It was common knowledge that wild jackdaws that were caught could be housed in cages and trained to speak (TMB, 2011b). O'Connor argues that jackdaws are intelligent birds and "make good pets, readily adapting to a domestic life, and forming close attachments to humans. At least some of the jackdaws that we find in medieval deposits may have been companion animals, not scavengers: only the context of a particular find would show that distinction" (O'Connor, 2008, 170), although it is unknown how common pet jackdaws were during this period.

William of Malmesbury's *Chronicle of the Kings of England* details a tale he apparently heard in 1065 of a woman living at Berkeley who had a pet jackdaw "which was a very great favourite"; he describes how this bird would chatter at her to warn her of misfortune (Kors and Peters, 2001, 71;Burton Russell, 1972, 98). He goes on to describe how the so-called 'Sorceress of Berkeley' practised "infernal craft" and was "addicted to sorcery"; eventually her skills at augury led her to predict her own death (Kors and Peters, 2001, 71). The ability of jackdaws to mimic human speech combined with this association of jackdaws with witches may have meant that this species was

viewed with suspicion. However, this does not answer the question of whether jackdaws were an unusual pet during this period; they may have been a rare pet or the author may have invented the bird to emphasise the 'otherness' or 'strangeness' of the witch. Considering that these birds could be kept in cages, taught to speak and their prevalence on British archaeological sites, it is likely that pet jackdaws were more common than previously thought.

Chapter 4: Identifying pets in the archaeological record

This chapter will discuss what evidence pet-keeping may have left in the archaeological record in the form of animal remains and the theoretical ways that pets may have been disposed of after death. It will also address the question of how companion animals were treated after death, discuss what evidence these practises may have left in the archaeological record, if any of this evidence will have survived, and to what degree, if any, this will be archaeologically visible. This too, is clouded by modern Western cultural perceptions: in Asia, dogs are viewed as food animals and once dead they are treated as food waste, but in the West they are seen as beloved pets, with the idea of eating them seen as repugnant by many (Serpell, 1986, v). After death, Western companion animals are buried, often in a 'plot' or area of the owner's garden, but sometimes they are interred in specialist pet cemeteries, alternatively they may be cremated, or their owners pay to have them subjected to taxidermy (Serpell, 1986, 24). If the cause of death is not apparent, then the animal may also be autopsied (OSU, 2015). Therefore, the assumption that Western pets are not subject to 'butchery' after death is incorrect, as autopsied animals are cut open and examined to ascertain cause of death, and so pets that were autopsied may theoretically show butchery marks on the skeleton.

It is necessary to look at the assumption that pets would not show evidence of butchery in more detail to assess the accuracy of this assumption. Just because this is the modern Western norm (Goodland, 2013, 252), that does not necessarily mean that this occurred in the past. In fact, there is a high probability that this was not the case at all, as O'Connor argues in *The Analysis of Urban Animal Bone Assemblages: A Handbook for Archaeologists*, imposing our own cultural values upon the past focusing

on cats and dogs, whilst failing to take into account that jackdaws were also kept as pets and raises the possibility that so-called ‘pet-burials’ may in fact be mistakenly identified foundation deposits (2003, 81).

Holmes argues that "While the historical evidence is strongly in favour of the elite being the dominant pet-keepers, it is likely that the lower classes also kept companion animals, as the acquisition of pets such as dogs or cats would not have been costly" (Holmes, forthcoming, 108). Whilst I agree with Holmes’ statement, I also believe that it is likely that the lower classes would have acquired immature wild animals or birds, since these would be easiest to tame and acclimatise to human contact and keep and pets, and could be obtained and fed relatively cheaply. Analysis of the animal bone data from excavation monographs can potentially provide valuable information about the distribution of these species and at what types of British archaeological sites companion animals were present. There is likely to be evidence of pet-keeping at ecclesiastical, urban and high-status sites, as clergy and women are the dominant pet-keepers during this period (Walker-Meikle, 2008, 16) and this subgroup of the population lived at these types of sites. There is no literary evidence for peasants keeping pets, although they are rarely discussed in historical texts. That does not mean they did not have pets, but identifying companion animals in the archaeological record is complicated enough even considering that pet-keeping in low-status households may be more difficult to recognise archaeologically than elite pet-keeping due to the typical excavation bias towards high-status sites or buildings, as they are traditionally deemed to be more interesting (Grant, Gorin and Fleming, 2015, 491).

If times were hard or the animal fell out of favour, people may have resorted to killing and eating their companion animals. So could only the rich have afforded to be

sentimental about their pets after death, allowing their companion animals to be buried? If so, where would they bury them? Was this behaviour displayed only by elites, or did it also manifest in the merchant classes? O'Connor argues that there is likely to have been significant variation in pet-keeping habits (or lack thereof) between houses at urban sites, even if these households were located next to one another (2003, 81), which is logical considering that pet-keeping is strongly dependent on personal preferences. The lower classes would not have been able to afford exotic or unusual species, which were usually acquired via high-status gift-exchange, so if they did keep pets these would most likely have been native species that were commonplace at the time.

Dead pets and furrier waste

Dead pets may have been disposed of in the Medieval period by burial in a specially dug pit, burial in a rubbish pit, or the animal could be buried in a pit which could then be filled in with rubbish, rendering this deposit indistinguishable from other domestic refuse (O'Connor, 2003, 82). Alternatively the carcass could be sold to a furrier. Typically, furrier waste consists of large amounts of bones from the feet and ankles, typically the carpals, tarsals, metapodials and/or phalanges, often with cut marks on these elements (Fairnell, 2003, 13), and an assemblage containing high numbers of these is usually interpreted as evidence of skinning or pelt-processing. Typically, furrier waste includes multiple phalanges, usually thrown in a pit, often consisting of rabbit, red squirrel, cat, fox or ferret/polecat remains (Strid, 2011, 357). This is because until the mid-19th Century hides were transported to the tanneries with their foot bones still connected (Luff, 1993, 51).

Skinning was an important industry in Medieval England; fur was worn by all classes for warmth and decorative purposes. In the 14th century court garments often used squirrel miniver (white) and gris (grey) fur (Veale, 1966), and according to the 1285-88 Royal Household accounts, 119,300 squirrel skins were bought during this period (Veale, 1966; Serjeantson, 1989). It required a large amount of squirrel skins just to make one item of clothing, according to Veale "A short garment could use 366 squirrel skins, a larger robe thousands of skins", and in addition to this, strips of squirrel paws were used as linings and trimmings (Veale, 1966).

As Richter explains: "Cut marks are perhaps the most obvious evidence of skinning… and cut marks in certain areas of the carcass are interpreted as such evidence" (2005). The main indicators of skinning are cut marks around the skull, particularly the eye orbits and muzzle (Haming, 1990), and cut marks around the lower parts of the limbs, particularly the feet and claws (Fairnell, 2008, 48), although cut marks on the pelvis can also be taken as evidence of skinning (Strid 2000; Trolle-Lassen 1987).

Throughout human history pets were, and still are, commonly abandoned out of necessity in the case of disaster and war, for example in the ghost town of Pripyat after the 1986 Chenobyl disaster, where the residents abandoned their companion animals during the evacuation (Dobbs, 2013, 161). This also happened in 13th Century North Italian towns that had been abandoned when their inhabitants fled from the Holy Roman Emperor, Frederck II's armies, and the chronicler Salimbene de Adam describes a canny man who profited from this: "He had caught in his traps twenty-seven fine cats in the burned-out cities, and he had sold their pets to furriers. There can be little doubt of that, because in peace time they had been pet cats in those cities" (Walker Meikle, 2011, 20). Dead pets sold to a furrier would be archaeologically indistinguishable from

animals killed for food and fur, as their remains would be disposed of with the rest of the furrier waste. The presence of furrier waste or butchery marks is therefore not enough to rule out the fact that this may have been a possible companion animal. Pets may have been cherished as companions by their owners but that may not have stopped enterprising individuals from selling lost or stolen pets to furriers to gain themselves a profit, as was the case of the Parisian students who caught cats and sold them to the furrier for their skins discussed by Jacques de Vitry (Hartman, 2007). This practise may have been more widespread than previously thought in Medieval towns than previously thought, and companion animals may have been at risk of being stolen and sold to furriers, although unfortunately this practise would be recognisable in the archaeological record.

The English Heritage animal bone guidelines advise identifying potential pets in the archaeological record by the presence of "archaeological context and skeletal completeness", or evidence of human medical intervention, e.g. healed breaks in fractured bones, where the bone was artificially set and healed straight, concluding that "depending on their ecological requirements, some exotic animals may only have survived under human confinement" (EH, 2014, 5). However, this fails to take into account that the deliberate burial of a complete animal may not have even have been the most common method of disposing of dead pets. A common Medieval belief, perpetuated by the Church, was that animals did not have souls (Ganim, 2009, 175), and another school of thought, attributed to Augustine, was that the souls of animals cease to exist upon the animal's death (Walker-Meikle, 2012, 2-3). Therefore if they had no souls, their bodies were worthless after death except as raw materials and as such, people may not have felt the need to bury them. Sykes argues that considering

this belief and that an animal's fur or meat was worth money, then collecting raw materials, such as fur, from dead animals was "entirely logical" (Sykes, 2014, 146). Otherwise, it is likely that dead companion animals were thrown on middens or in rubbish pits. One could assume that this would leave behind an articulated skeleton, but this may not be the case. Considering the way that decomposition affects the corpse, as the flesh decomposes, the bones may fall and slip, especially if they were deposited in a pit or on a gradient, since once the connective tissues have broken down, the bones move around and so would no longer appear to be articulated (Haglund and Sorg, 2001,104; Binford, 2014, 43).

The role of isotope analysis in understanding Medieval pet-keeping

Ultimately, the practise of placing foundation deposits of complete animals under buildings may have been confused with the deliberate burial of a dead companion animal or vice versa (O'Connor, 2003, 82), although it may ultimately be impossible to distinguish between the two without resorting to isotope analysis, which would be able to isolate specimens that were fed luxury foods or table scraps, which would be closer to the diet of humans than of working animals. Nitrogen ratios from bone or teeth can be used to determine if an animal's diet was herbivorous, carnivorous or omnivorous and how much fish they ate (SFU Museum, 2010). Strontium is absorbed into the body via drinking water with different areas having differing strontium ratios, and carbon isotope analysis detects the ratio of C_3 and C_4 plants in the diet, both of which identify what geographic region an animal originates from (SFU Museum, 2010; Tykot, 2006, 133). These could provide valuable information about how Medieval

people acquired their pets, for example if exotic pets such as parrots were bred in Britain or if they were imported, which could improve knowledge of trade routes.

A rare example of isotope analysis being used to identify pets is the late 16th-early 17th Century guinea pig from Mons, Belgium, where nitrogen analysis showed that it had been fed a diet of table scraps (Pigière *et al*, 2012, 1022). Considering Albertus Magnus' complaint that pet dogs were often fed too much meat (1999, 1463), this may potentially have occurred with other species of pets. Jackdaws are typically omnivorous (BTO, 2012) but if their owners spoiled them pet jackdaws may have been fed more meat, which may be recognisable in the isotope data. Sadly, this sort of analysis when dealing with potential pet remains is unusual due to funding constraints, although isotope analysis is becoming more widespread in archaeology and will hopefully be undertaken more often as the cost decreases.

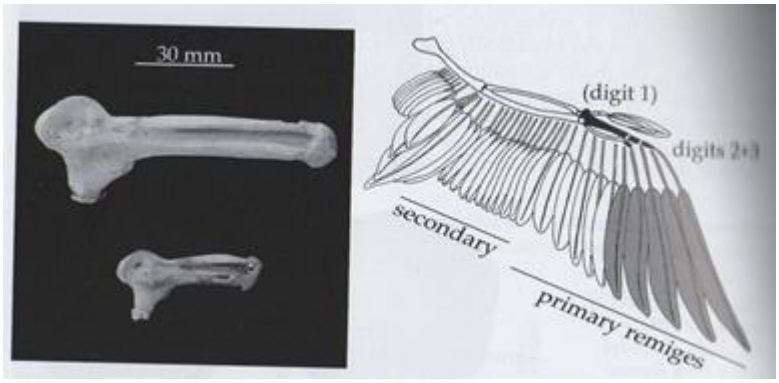


Figure 17: Carpometacarpi calluses caused by pinioning (Bartosiewicz, 2013, 225)

Skeletal evidence for pet-keeping

Some evidence for pet-keeping may be visible on the skeleton: one method of ascertaining whether a bird was tame is to check the wings for pinioning. Some chicks have the tip of the wing amputated, which affects the bird's mobility, rendering them unable to fly far (Bartosiewicz, 2013, 224). This forms a visible callus on the distal end of the carpometacarpi (*Figure 17*)(Bartosiewicz, 2013, 225). Skeletal evidence for pinioning may be recognisable in the archaeological record, although admittedly a bird's mobility can also be curtailed by clipping its feathers, but this procedure is non-permanent and would need to be regularly repeated as the feathers do grow back (Bartosiewicz, 2013, 225), and thus leaving no trace archaeologically. If this type of skeletal lesion were present on a wild species of bird that was usually eaten, then this may suggest that this individual bird was kept as a companion animal, so it would therefore be helpful if bird bone assemblages were checked for this particular skeletal abnormality, as this could help to add to the evidence for the presence of pets at archaeological sites. Bartosiewicz argues that it would have been practised since antiquity in order to stop ornamental captive birds from escaping (Bartosiewicz, 2005, 259-69), although this type of healed bone trauma has not yet been documented from archaeological animal bone assemblages, (O'Connor, 2013, 225). However, this is a niche area of zooarchaeology and it is likely that so far archaeologists have simply not been looking for this type of deliberate skeletal modification in bird bone assemblages.

Figure 18 is a pathological jackdaw tarsometatarsal with green stained coloration on the upper diaphysis from Bejà, in Alentejo Portugal (Moreno-García and Pimenta, 2010, 271). Moreno-García and Pimenta suggest the bird wore a metal ring with an attached chain, and discuss how jackdaws were taught to speak and kept in cages

(2010, 271). Although not from a British site, it does raise an interesting alternative to cages for medieval bird-owners, as the bird could be tethered to a perch in this way. I have been unable to find any British references to this practise for pet birds but that does not mean it did not occur.



Figure 18: Pathological jackdaw tarsometatarsal with green stained coloration on upper diaphysis next to modern specimen (Moreno-García and Pimenta, 2010, 270).

Pet-keeping can also affect a companion animal's skeletal development due to insufficient vitamins, minerals or exercise, for example the cortical development in captive animal bones is usually more "porous and diffuse", and this has been used to identify captive monkeys (Davis, 2012, 194-5). It may be possible to investigate cortical development and other pathologies with other species of modern companion animals (Thomas, 2005b, 95), using this as a control for identifying companion animals archaeologically. In addition to this, recognising vitamin deficiencies in medieval squirrel bones could be an excellent way of identifying potential pets: modern pet

squirrels often suffer from vitamin D and Calcium deficiencies as they may not have access to sunlight and do not always get sufficient calcium with a captive diet, although in the wild they rarely exhibit this deficiency (Kaplan, 2014), as wild squirrels and rabbits are known to chew bones and antlers (Baker, 2015, 249). Captive pet red squirrels can be given deer antlers or cuttlebone to chew to which are high in calcium to supplement their diet (Baker, 2015, 249), but potentially medieval pet owners may not have done this. Insufficient diet, specifically a diet lacking in Calcium and vitamin D for pet squirrels can result in a number of osteological abnormalities such as osteoporosis or rickets (Saker, 2013, 7; Woodard, n.d.; Bergman-Althouse, 2011, 5). These may be potentially recognisable in squirrel bones from Medieval urban and high-status sites, then this would imply that the squirrel had been kept in captivity, most likely as a pet, which would provide definitive archaeological evidence for the keeping of pet squirrels in Medieval Britain.

Conclusion

Due to Medieval attitudes to animals after death, pets may not be visible archaeologically as they may not have been buried and instead been thrown away with domestic rubbish or sold to a furrier. Unfortunately isotope analysis of companion animal diet and origin will likely be dependent on the availability of funding, but considering the current zooarchaeological rise of interest in pet-keeping hopefully it will only be a matter of time before this type of research begins. Until then there are relatively simple ways to identify pets do not require expensive laboratory work. Pet-keeping may leave visible skeletal lesions, for example an inadequate diet which can result in rickets, osteoporosis or abnormal cortical development.

Chapter 5: Analysis of animal bone assemblages containing squirrels, rabbits and jackdaws.

This chapter will focus on a selection of English urban sites with large zooarchaeological assemblages from the period 1050-1485 (York, Winchester, Chester, Dudley Castle and Oxford), examining animal bone data gathered from excavation monographs for the presence of squirrels, rabbits and jackdaws. Parrots will not be included as so far the earliest surviving parrot from a British archaeological site is from mid-late 17th Century Norwich (Albarella *et al*, 1997, 51). Although small songbird species, including nightingales, songthrushes, starlings, blackbirds, goldfinches and great tits, as well as magpies (Randall, 1953, 286; TMB, 2011a) are known to have been kept as pets during this period, they will not be reviewed because despite the huge research potential there, it is beyond the scope of this dissertation (although it does have potential for further research). Although the date ranges for the Bedern foundry jackdaw and Merton College rabbits means there is a chance that they may lie outside the period of interest, they are included in this chapter even if this was the case it is doubtful that any significant social changes to pet-keeping practises took place during the interim.

Matilda Holmes' forthcoming English Heritage report, *Southern England: A Review of Animal Remains from Saxon, Medieval and Post Medieval Archaeological Sites* is one of the rare studies that attempts to identify pet burials in the archaeological record, by examining skeletal completeness and burial conditions. She has investigated potential pet burials in the Anglo-Saxon, Medieval and Post-Medieval periods. Although the majority of these are dogs and cats, which are not species addressed in this

dissertation and so have not been included (109-110,152-3). Eva Fairnell's 2013 MSc dissertation, *The utilisation of fur-bearing animals in the British Isles: A zooarchaeological hunt for data*, has also been referenced as a valuable source of information on skinning and tannery deposits, with the majority of the sites from Eastern and Southern England (108).

Red Squirrels

308 squirrel bones were found in a c.1050-1225 context from Winchester (Ford and Teague, 2011, 340), which was interpreted as furrier waste as the majority of the bones were phalanges, metapodials, metatarsals and metacarpals, with an MNI of 11 (Ford and Teague, 2011, 352) Red squirrel bones were also found in 14th–15th century deposits at the Bedern, York which mostly consisted of metapodials and phalanges and made up 35.7% of the deposit (Bond and O'Connor, 1999; Fairnell, 2003, 32), mixed with food waste (O'Connor, 1989), which was interpreted as the discard or processing of pelts (Bond and O'Connor, 1999). The presence of 3 red squirrel bones, metapodials and phalanges, at 16-22 Coppergate was also interpreted as evidence of skinning (O'Connor, 1989, 191).

There were 4 red squirrel bones from the Late Medieval period at Dudley Castle, West Midlands (Thomas, 2005a, 99). Red squirrels are naturally shy of humans and usually avoid them, so they were likely deliberately taken to the site, although as Thomas explains "it is impossible to determine whether they represented the disarticulated remains of a number of buried pets, or bones removed with the skins in the exploitation of fur" (2005b, 98). Out of the 11 records of red squirrel remains from Fairnell's research, eight are from urban sites (seven from York), one is the Dudley

Castle example previously mentioned (Thomas, 2002b, 98) and another is the high-status Faccombe Netherton site in Hampshire (Fairbrother, 1990). Fairnell concludes that only six of these show definitive evidence of skinning: 2 different phases from 16-22 Coppergate, Millbridge, Feasegate, Tanner Row and the Bedern (2003, 32).

Red squirrel bones found on British urban sites are typically interpreted as furrier waste. Squirrel fur was high-status and hugely, so large amounts of red squirrel furrier waste are to be expected, however, squirrels were also kept as pets popular during this period.

Rabbits

There is little evidence for the keeping of pet rabbits in urban assemblages, although Holmes has identified two almost complete rabbit skeletons that were found in a pit (phase 6 pit 1010) at Merton College, University of Oxford, dating from the late 14th-mid 16th Century as potential pets (Holmes, forthcoming, 110) and the excavators admit it is “unlikely” that these two specimens were eaten since there were no butchery marks present (although they argue they may have been boiled whole, as this would not be visible skeletally) (Poore et al. 2006, 253,317). At Dudley Castle, 106 rabbit bones were found dated to the period 1261-1321, which have been interpreted as food remains (Thomas, 2005a, 66-7). At Bridge Street, Chester, 2 rabbit bones were found in an Early Medieval context, and another 2 rabbit bones were found in a Late medieval context (Smith, 2008, 342-4). Only 1 rabbit bone was present at 16-22 Coppergate in a c.975-early/mid 11 century (O’Connor, 1989, 190). The number of rabbits at these last 2 sites is too small to draw any significant conclusions from.

Out of 222 records, only three of these have been identified as furrier waste since these are the only records with evidence of skinning (Fairnell, 2013, appendix), which included cut marks and element representation (Thomas, 2002; Maltby, 1979; Bourdillon, 1992); of these, only Dudley Castle is within the applicable date range (Fairnell, 2013, appendix). Rabbit bones found on British urban sites are typically interpreted as butchery or furrier waste.

Jackdaws

In his 2003 work 'The Analysis of Urban Animal Bone Assemblages', O'Connor suggests that two jackdaws, one adult and one immature (context 283) from a deposit containing household waste at the Bedern foundry site in York may have been pet jackdaws (O'Connor, 2003, p.90). Although the Bedern foundry site deposit is post Medieval, O'Connor argues that this species were kept as companion animals in both Roman and Medieval Britain (2003, p.81). Jackdaws are a wild species that were often present at Medieval urban archaeological sites, and this is usually interpreted as this species being scavengers (O'Connor, 1989, 194). However, these birds may also have been pets in some instances, as their widespread availability combined with their ability to mimic the human voice may have made them more desirable pets.

A c.1050-1225 context from Winchester contained 5 jackdaw bones, although 4 complete tarsometatarsi (three right and one left) were found in a pit (NH5175) (Ford and Teague, 2011, 353), and Strid suggests they may be the "remains of cut-off feet, the adherent phalanges being missed during excavation" (2011b, 36), so potentially the bird was buried whole, although verification is not possible. Dudley Castle had a large number of late Medieval jackdaw bones with no butchery marks (Thomas, 2005a,

73), with 2 jackdaw bones from 1321-1397, 11 dating 1321-1533 and 81 from 1397-1533 (Thomas, 2005a, 100). 16-22 Coppergate had 2 jackdaw bones from a c.975 deposit, which were interpreted as scavengers (O'Connor, 1989, 194).

Jackdaw bones found on British urban sites are typically interpreted as scavengers. Smith suggests that they may be present in leatherworking contexts as they were likely attracted to the bones and waste (2008, 349).

Discussion

The foremost archaeological evidence for skinning in zooarchaeological assemblages is cut-marks on the ankles and skull (Fairnell, 2003, 9). Poore *et al* argue this does not account for other cooking methods such as boiling the animal whole (2006, 253) and Fairnell maintains that a skilled skinner may not leave any marks on the bones (2003, 9). Skilled butchers leave minimal marks (Fairnell, 2003, 9), and if preservation was poor or those elements were not preserved, then animals may appear to have not been butchered.

Intensive sieving is necessary as otherwise recovery bias will skew the relevant data, as the tiny bones of rabbits, squirrels and jackdaws will be missed using a hand collection sample strategy (Moreno-García and Pimenta, 2010, 262). The presence of these species is likely to be higher on urban sites than previously thought, and recovery bias complicates using these species to establish pet-keeping trends, since the numbers of these species will be inaccurate unless an intensive sieving strategy was implemented. However this data can still be used to establish pet-keeping trends, but the figures should be treated with caution. The increased use of sieving and flotation on

excavations would raise the amount of small mammal and bird bones found, but unfortunately these procedures are vulnerable to budgetary and time constraints and are often not prioritised, although hopefully this will change in the future.

Small bones are more vulnerable to unfavourable preservation conditions such as acid soils and may not survive. This is especially true if they were juveniles, as epiphyseal fusion would not have been completed and the bones would have been more fragile and less likely to survive (Prummel et al, 2010, p.32). In addition to this some of the excavation monographs focus on the three main domesticates and just give the NISP/MNI of other less well-represented species per phase, not specifying what elements were present, which renders an alternative interpretation difficult.

This chapter only reviews urban areas as it is easier to identify the role of animals due to the narrow selection of species present in towns and the large sample sizes. The parameters of this research were restricted by the accessibility of site reports for large urban archaeological assemblages with good skeletal preservation and intensive sieving strategies. There is significant potential for a collaborative zooarchaeological database of all the species present on archaeological sites in Medieval Britain, which would more easily facilitate this type of research in the future.

Conclusion

Many companion animals would be archaeologically unrecognisable as pets if they were processed for skinning after death. It is likely that they would only be identified if they were fully articulated, like the Bedern foundry jackdaws. Even if the physical evidence is not present in the archaeological record, it is important to remain open minded and to take into account that these practises were still happening although they leave little to no skeletal trace.

Chapter 6: Pet-keeping paraphernalia: the archaeological evidence for companion animal accessories

This chapter will detail the surviving physical evidence for pet-keeping paraphernalia from Medieval Britain. Asides from the literary and iconographic evidence, and the skeletal remains, pet-keeping in the archaeological record will leave other physical traces behind in the form of pet accessories, including cages, collars, chains and birdfeeders. In addition to their presence in museum collections, many of these metal small finds have been recorded in the Portable Antiquities Scheme (PAS) database, and this chapter will review a selection of these artefacts (which are included in *Table 1* for ease of reference), whilst also discussing what birdcages can tell us about behaviour, pet-keeping practises and pet/human relationships in Britain during this period.

Other organic items such as fabric birdcage covers and leather or velvet collars were used in the Middle Ages, and their purchases do feature in elite household accounts (especially Isabeau of Bavaria's household accounts, who often purchased lavish accessories for her companion animals) (Walker-Meikle, 2012, 52) but these items are unlikely to survive archaeologically due to their delicate nature. Although the purchase of these types of items is mentioned in household accounts from this period, so far there has been very little study into whether any of these items survive in the archaeological record in Britain.



Figure 19: a popinjay in a hanging cage, c.1350

(Stiftsbibliothek Codex 151, Condordatiae Caritatis, fol165V).



Figure 20: Bird in hanging wooden cage 1350

(Stiftsbibliothek Codex 151, Condordatiae Caritatis, fol71v).

Birdcages

Birdcages have been in use since Antiquity; Pollux mentions an iron birdcage in his description of an 8th Century BCE Greek house (Randall Jr., 1953, 286; X, 160). As previously discussed, we know from paintings and manuscript illustrations that birdcages were a popular motif during the Middle Ages. Wire cages were especially popular in the late fifteenth century: apparently the King of Sicily kept nightingales in an iron wire cage in his chamber in the palace at Aix (Randall Jr., 1953, 288). In the Goodman of Paris's c.1393 work *Le Ménagier de Paris*, the author advises his wife that small caged birds kept in the chamber should have their cages cleaned daily (2006, 138), which implies that during the middle ages birds kept for pleasure in the home were kept in cages and standards of hygiene were recommended to stop the cage from smelling unpleasant.



Figure 21: 15th/16th Century wrought iron birdcage 'The Cloisters Cage', South France (Metropolitan Museum, n.d.).



Figure 22: Remains of a birdcage from a sewer in medieval Lübeck, North Germany (Mührenberg and Falk, 2001, 58).

To my knowledge there are no surviving medieval birdcages from Britain. However, I have found two European examples from this period, one from France and one from Germany (MMOA, 2014; Mührenberg and Falk, 2001, 58). The Metropolitan Museum of Art has a wrought iron birdcage (known as 'the Cloisters Cage') from the Rhone valley dating from AD 1400-1600 (*Figure 20*) (MMOA, 2014). Analysis of the Cloisters cage has shown that the hinged lid (held in place with damaged two hinged catches) would have been tilted back, allowing an inner cage constructed from light wire (which does not survive) to be removed from where it was fixed against the birdcage's base (Randall Jr., 1953, 287). Randall argues that this moveable wire section enabled the cage to be cleaned more easily *"or perhaps to be carried outdoors and hung in the sunlight*" (Randall Jr., 1953, 288). The Cloisters cage measures thirteen and a half inches in height, and was probably used for pet birds: Randall argues that due to its size, the cage may have been used to house two goldfinches or a popinjay (1953, 287).

As in the Cloisters cage example discussed above, during the Late Middle Ages birdcages belonging to the rich were often made of metal (Randall Jr., 1953, 288)

although cages made from wood were also used, which were cheaper to manufacture (Hirschberg, 2012). The German example (*Figure 21*) survived because of the exceptional preservation conditions in the sewer in Lübeck (Mührenberg and Falk, 2001, 58). Potentially these artefacts may survive in the archaeological record if there are excellent preservation conditions, although it is possible that this type of artefact is just not being recognised archaeologically in Britain, for example it may be misidentified as a piece of wattle (O'Regan, personal communication, 2015).



Figure 23: A 14th Century peddler hawking wooden birdcages (Randall, 1953, 292)

The artefacts discussed in this chapter demonstrate the variety of birdcages available in Medieval Europe but have yet to be identified in the British archaeological record, despite the evidence of multiple known British examples of birdcage accessories. Although there is a wide selection of literature that mentions the nobility's birdcages, the written evidence for this for the middle and lower classes is unfortunately severely limited. One of the few known examples is from York, where the impoverished goldsmith John Cobham's possessions included a birdcage worth one penny (Randall, 1953, 287). If lower-status people did keep pet birds in cages, then it is likely that these would have been constructed from wood, which would not survive in the archaeological record except under exceptional circumstances. However, at the

opposite end of the social scale, the lavish birdcages belonging to the elites that are mentioned in the household accounts and probate inventories, but items such as the silver cage Isabeau of Bavaria commissioned in 1402 do not survive in the archaeological record (Walker-Meikle, 2012, 52; Randall Jr., 1953, 291-2) and Randall argues that these were likely melted down (1953, 292). Elites commissioned their birdcages from specialist craftsmen, whereas the lower classes either made their own from wood or purchased them from peddlers (*Figure 22*)(Randall, 1953, 290).

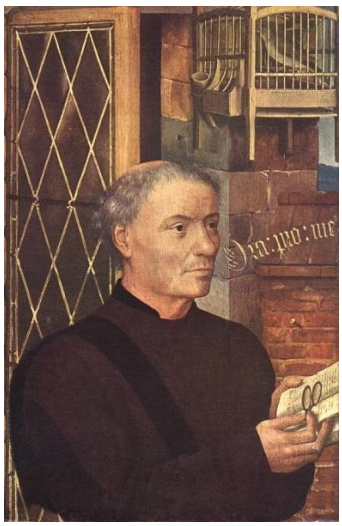


Figure 24: Matthias Grünewald's painting 'Donor with a birdcage' late 15th-early 16th Century (WGA, n.d.)

There are a number of illustrations of caged birds in medieval literary sources, including bestiaries, books of hours and illuminated manuscripts (*Figures 18, 19*). These illustrations can provide valuable information on what types and styles of birdcages were used, where the cages would be placed (or if they would be hung from the ceiling or another high place), or if the cages were deliberately positioned in windows or sunny places, either to allow the birds to enjoy the sun and watch the people, or so passers-by could see the birds, thus allowing the pet-owner's to display their wealth (*E.g. Figure 23, which features a birdcage hung by an open window*). This

imagery may shed some light on how people interacted with their pet birds when they were inside their cages, which could also potentially impact on medieval awareness of animal welfare issues; e.g. if the birds were given sufficient space or if they were kept in too-small cages. Nowadays the recommended size for birdcages is as follows: “the size of the cage… needs to be large enough for a bird to move freely around in it. The rule of thumb is to choose one that's three times the length of the bird's wingspan” and for more than one bird, a much larger cage is necessary so they have sufficient space (Kalhagen, n.d.; Pets4Homes, 2015).

It is unlikely that pet birds were kept in their cages all the time: it would be difficult to clean the cage with the bird still inside it so the bird was probably allowed outside the cage or placed in a smaller temporary cage during this time (similar to the way goldfish can be decanted into a smaller tank, allowing the larger fish tank to be cleaned), especially considering that small birds like finches may have been difficult to return to the cage once they were out of it. In addition to this, birds kept as companion animals need to exercise and fly about, which they can’t do in a cage; this is necessary for their mental health and if they cannot exercise or are kept in cages with insufficient space they become depressed and may develop behavioural problems (Pets4Homes, 2015). Some may argue that the consideration of animal-welfare issues and the mental health of medieval pets is irrelevant for a society where hunting was commonplace and animal-baiting was considered a socially-acceptable form of entertainment. Despite frequent doctor’s complaints about rich medieval ladies’ habit of overfeeding their pets (Walker-Meikle, 2014, 44-5), I would argue that in the case of pet-keeping, these issues are indeed relevant. Depressed birds usually do not talk or sing, and often self-harm by pulling out their own feathers (Zeeland *et al*, 2009, 75), which would render

the pet less attractive to its owner, especially considering that the main appeal of a pet bird is listening to them talk or sing and appreciating the colour of their healthy, glossy feathers. A severely-depressed, mistreated pet bird is highly unlikely to exhibit any of those characteristics (Zeeland et al, 2009, 75). Nightingales, jackdaws, parrots and other birds that could mimic speech or sing were highly prized and often expensive because of this ability. If medieval people were aware of basic animal welfare, even if they did not consider this in these terms, it still makes financial sense for the rich, who spent large amounts of money on parrots and nightingales, to maintain and protect their investment to the best of their ability; they would wish to encourage the pet to talk or sing and to discourage it from plucking out its own feathers, because this makes for a very unattractive pet and would damage the bird's financial value. After all, a bald, unhappy parrot that refuses to speak loses its appeal as a status symbol. If medieval pet owners were aware of this (which admittedly they may not have been) then they would likely have given their birds sufficient space and allowed them to exercise, although if the bird was of low financial value they may not have been as concerned. Potentially, that may have been when the owner of the unfortunate bird resolved to wring its neck and eat it instead.



Figure 25: In the garden a man holds a birdcage, the other probably a tame goldfinch, North Italy, c.1390. (N Tacuinum sanitatis, Cod Vindob S. 2644, folio19v)

If, as the Goodman of Paris recommends, birdcages were cleaned daily to prevent bad odours (2006, 138), then what happened to the birds whilst this was happening? It is likely they were removed from their cages and handled whilst the cage was cleaned to prevent causing undue stress to the bird. In elite households pet birds were probably handled by their owner or allowed to fly about the room whilst their cage was cleaned by servants. It seems logical that pet birds allowed out of their cages to exercise were kept confined to indoor spaces to prevent them escaping, but it is less clear if pet birds were ever allowed outside uncaged. However, some of these cages were also portable, and as can be seen in *Figure 24,* it seems likely that some owners of pet birds would have the birdcages taken outside to allow the bird to enjoy the gardens and exercise. This does bear the risk of escape, and so owners may have pinioned or clipped their bird's wings to resolve this issue, although as far as I am aware, there has so far been no investigation into evidence for this surgical procedure on medieval bird remains.

One cautionary tale warning of the dangers of releasing pet birds in gardens is Alexander Neckham's c.1180 work, *On the Nature of Things*, which recounts how a knight's pet parrot cunningly feigned illness, so servants took the bird outside hoping that this would revive it, and it promptly escaped (Boehrer, 2010, 28).

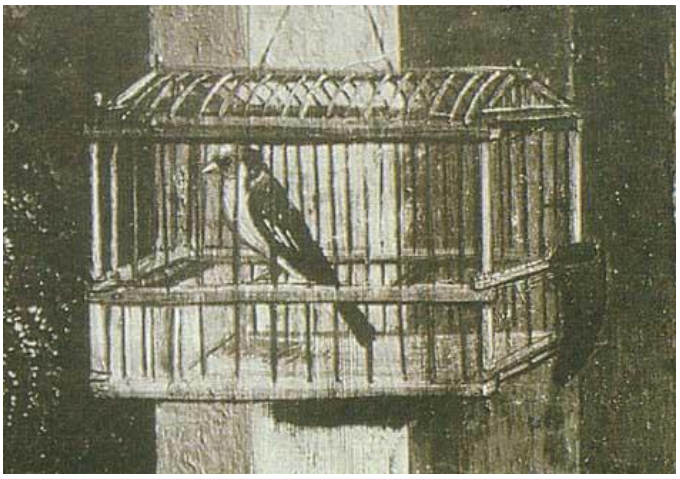


Figure 26: A 1570s birdcage: on the right side hangs a cattle horn (Mührenberg *et al*, 1997/1999, 59).

Cage accessories: birdfeeders and water-holders

Asides from the cages themselves, archaeological evidence for British bird keeping survives in the form of cage accessories, including small metal receptacles ranging in date from the early Roman period until the Early Modern period (Daubney, 2011; Hirschberg, 2012). Birdfeeders were made out of thin metal (tin, lead or other non-ferrous metal alloys), flattened on one side and attached to the side of a birdcage to hold seed or water (Egan, 2005, 129), although they may also have been fashioned from bovid horns fastened to the side of the cage (similar to drinking horns) (*Figure 25*)

(Hirschberg, 2012). There are no known archaeological examples of horn birdfeeders from Britain, which may be because of preservation conditions being unsuitable for horn and not due to the absence of this type of artefact, but metal artefacts have been discovered in the River Thames silts, and some of these vessels still contained seeds, although one example contained bone dice (*Figure 26*), and an alternative interpretation is that they may have been used (or re-used) as dice rolling cups (Geake, 2014).

There are several examples of the metal birdfeeder artefact type broadly dated c.1400-1600AD on the PAS database, but their identification has been subject to debate since it has been suggested that similar vessels marked with a cross were used as small stoops for holy water (Charman, 2015), although the contemporary illustrations do appear to corroborate the theory that many of these artefacts were birdfeeders (Laakso, 2011; Watters, 2011). Unless similar small artefacts featured crosses in their decoration then I would argue that their most likely use was as birdcage accessories. There is an understandable difficulty in dating metal artefacts of this type, as unless they found within a datable sealed deposit absolute dating is usually not possible and they have to be dated via typology. This is typical of PAS database artefacts which are found by the public, mostly by metal detecting (PAS, 2016).

Typically, the more decorative birdfeeders are earlier examples of this artefact type date from the late 15th-16th centuries, but after this the designs became plainer and featured less detail, with this minimally decorated style continuing into the late 17th century (Egan, 2005, 129). The PAS database also includes a number of these artefacts dating to the post-medieval period (PAS, 2015). These artefacts are not just found on

the PAS database and can also be found in museum collections: the Museum of London has a pewter birdseed pot with an eagle and lozenge pattern decoration that was discovered on the Thames foreshore (it had been re-used as a receptacle for six loaded bone dice) ID: 84.136/25 (*Figure 26*)(MOL, n.d.), although it was unstratified it has been typologically dated to the Late 15th Century; (Egan 2005, 129). *Figure 27* is a lead birdfeeder from a late medieval to early post-medieval birdcage (ID: BH-1A17F3) (Watters, 2011). *Figure 28* (ID: LON-216584) has a raised decoration depicting a shield and two birds, and is one of the more elaborate examples of this type of artefact on the PAS database (Simpson, 2011), although Read's 1988 book, *History Beneath Our Feet*, includes a similar artefact (number 606), dating to the 15th Century (Read, 1988, 98; Tyacke, 2011). These items may have been custom-made purely as cage-accessories for pet birds and were not existing small vessels adapted for use as birdfeeders.

Although admittedly not all of these artefacts may have been used for pets, I would argue that if they were created for purely utilitarian reasons (i.e. as birdcage fittings for birds being raised to eat), then there would be little point in making these items decorative (like *Figure 26*) as birds kept for food would not have been intended for display and their cages would likely have been kept out of sight. Since the bond of affection that one would expect in a pet/human relationship would not exist in the case of birds intended for the table, then it is unlikely that people would choose to give birds raised for food expensive accessories. This is in direct contrast with a caged pet bird, which would likely have been given a more decorative or expensive cage prominently positioned within the home.



Figure 27: Late 15th Century pewter birdseed pot with eagle and lozenge pattern

ID no: 84.136/25 (Museum of London, n.d.)



Figure 28: squashed lead birdfeeder from a birdcage c.1400-1600 ID: BH-1A17F3

(Watters, 2011)



Figure 29: Birdfeeder with shield and two birds decoration (ID: LON-216584) (Simpson, 2011).

Collars and chains

There are issues distinguishing between collars used for working animals and collars used for companion animals. Squirrel-size collars, for example, would obviously belong to pets, but larger collars can be more ambiguous. Decorative collars with bells (which were worn solely by pets in the iconography) would clearly have belonged to pets, but companion animals may have had plainer leather collars for everyday use, similar to those worn by working animals. Walker-Meikle also proposes that elite pets may have not worn collars on a daily basis and may have only worn their elaborately-decorated expensive collars when they were 'dressed up' for important occasions when it was necessary to demonstrate their owners' wealth and prestige (2012, 52-3). However, small bells are found on high-status medieval sites, and Fleming asserts that these were probably worn on the collars of hunting dogs (Fleming, 2011, 33), although this seems unlikely due to impracticality. The two copper alloy artefacts SF-4A8FA1 and

LVPL682 from the PAS database have been tentatively identified as decorative bells from pet collars, although their exact function is uncertain and they may also be part of horse harnesses or hunting dog collars (Herepath, 2011; Plunkett, 2011).

High-status pet collars were made from delicate leather, precious metals and jewels, for example, squirrels were commonly restrained with collars and thin chains, some of which were very elaborate and expensive: Isabeau of Bavaria's pet squirrel had a collar decorated with pearls held together with a gold clasp (Walker-Meikle, 2012, 52). Animal collars do not usually survive in the archaeological record, but one exception is the Waterford collar. This is a 12th Century thin copper-alloy collar with a missing buckle found in Waterford, Ireland (Grieve, 2012, 206). Originally this elaborate collar would have been lined with leather or fabric backing, which it would have been fixed to using the six small holes, but the buckle that would have originally been used as a fastening is missing (Waterford Treasures, 2015). Analysis has shown that it meant was for a dog, probably a greyhound (since it would fit the neck of a modern greyhound) (Grieve, 2012, 206). The Waterford collar also strongly resembles the collars worn by the dogs in the Bayeux Tapestry (Waterford Treasures, 2015), which suggests that this level of workmanship was often used for elite animal accessories. There is also a Dog Collar Museum at Leeds Castle, with their earliest collar dating to the late 15th Century, although the majority of their collars are post-medieval (Leeds Castle, 2015).

I am not arguing that the Waterford collar belonged to a companion animal, as given that it is the correct size for a greyhound and greyhounds were kept as hunting dogs during the Middle Ages (Almond, 2011, 134), I would argue that this is very unlikely. However, I have chosen to include this artefact to illustrate the style and quality of elite animal accessories during this period, which may have been similar for

companion animal accessories. This artefact is in fact hugely significant as very few intact potential dog collars from Britain survive: the two Romano-British Lagore crannog collars and the late Romano-British collar from Great Chesterford, Essex (although these have also been tentatively identified as “slave collars”) (Grieve, 2012, 202-206). The Waterford collar remains one of the best examples of its kind since the others are neither as well-preserved or elaborate (Waterford Treasures, 2015; Grieve, 2012, 206).



Figure 30: The Waterford dog collar, 12th Century (AAI, 2015).

The PAS database also has a number of metal artefacts that have been tentatively identified as swivel loops for animal leashes, although this interpretation is problematic because these types of fittings are also seen in the chain supports that were used to suspend cooking pots above a fire or in horse harnesses (*Figure 30*) (PAS ID: IOW-50FFD3, BH-8036D2, SUSS-AF2826, SUSS-EFC4A1 and BH-5C6A22) (Basford, 2011; Eagan, 1998, 296). The copper alloy chain swivel loop below (IOW-50FFD3) is from the Isle of Wight and dates from c.1000-1100AD (Basford, 2011).

Figure 31 is a medieval cast copper-alloy and iron artefact from Staffordshire that has been identified as a harness or leash fitting (Slarke, 2012). Although its exact function

is uncertain, the decorative zoomorphic terminals, with their prominent ears, brows and snouts, may possibly represent dogs' heads, which might suggest that this object was originally part of a dog leash (*Figure 32*) (Slarke, 2012).



Figure 31: cast copper alloy chain swivel loop c.1000-1100AD (Finds ID: IOW-50FFD3) (Basford, 2011).



Figure 32: front and reverse view of Medieval swivel harness fitting ID: WMID-4E7A93 (Slarke, 2012).



Figure 33: Close up of the zoomorphic terminal from Figure 31 (Slarke, 2012).

Miscellaneous Small Finds

Two other small finds from the PAS database are also worth discussing in the context of pet-keeping. Measuring under 12mm across**,** *Figure 33* (ID: YORYM-126AF2) is a silver-gilt 14th Century miniature trefoil brooch from Yorkshire (Andrews-Wilson, 2011). According to Andrews-Wilson, these tiny artefacts "are an enigmatic category of object and may have been designed for infants, children or even pets" and their exact purpose is unknown, but they could have been sewn into place or used with delicate fabrics (Andrews-Wilson, 2011). *Figure 34* is a cast copper alloy figurative mount found in Nottinghamshire. The female figure is holding a bundle that has been identified as a pet bird, although alternatively it could be a small child with a missing head: Burrill and Egan were unable to be more specific about this artefact because of the lack of detail due to the small scale of the object (Burrill, 2010). The details of the woman's dress place the item in the 14th Century (Burrill, 2010).



Figure 34: Silver-gilt miniature trefoil brooch (YORYM-126AF2)

(Andrews-Wilson, 2011)



Figure 35: Copper flat-backed figurative mount depicting a woman (ID: DENO-27F566) (Burrill, 2010).

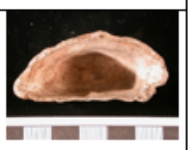
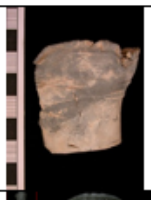
Conclusion:

Despite a lack of academic attention to this area and a pessimistic outlook about the survival of artefacts associated with pet-keeping, a number of pet-accessories have survived in the archaeological record. There is far more archaeological evidence for medieval pet-keeping than merely bones, and potentially there is a wealth of material culture for pet-keeping within the archaeological record that has so far remained unassociated with this practise.

Although there is sometimes difficulty discerning the function of some of these artefacts since many of the objects mentioned in this chapter may have more than one potential function or use or in some cases been adapted for a different use, there is still definite potential for further research into this area, to ascertain if any more

concrete interpretations for the functions of these artefacts are possible. Collars and cages can and do survive in the archaeological record, and potentially some of these artefacts may survive from Medieval Britain in sediments with good preservation. However, considering the majority of the artefacts on the PAS database were found by metal detectorists (PAS, 2016), who normally search open areas of land such as fields, which means that this data is significantly biased towards rural areas of England.

Table 1: Artefacts associated with pet-keeping from the PAS database

PAS ID	Object's function/s	Date	Location where found	Material(s)	Comments	Photograph
CORN-20E523	Bird Feeder	c.AD 1400-1500	Cornwall	Cast Lead/tin alloy	The centre back of the container has a small hole, likely used to attach it to the cage	
CORN-B5BEE5	Bird Feeder	c.AD 1400-1500	Cornwall	Cast lead/tin alloy	Read has a similar example (1988, p.98, no.606)	
LON-216584	Bird Feeder	c.AD 1400-1500	London	Lead alloy	Shield and and 2 birds raised decoration	
BH-1A17F3	Bird Feeder	c. AD 1400-c.1600	Bedford	lead	marked by double horizontal ridge with central band, with second double ridge below rim	
YORYM-2298E3	Strap fitting	c.AD 1150 - Exactly AD 1450	North Yorkshire	cast copper alloy swivel	may have formed part of a lead for pets	
YORYM-D816E1	Strap fitting	c.AD1150-1450	Yorkshire	cast copper alloy swivel strap fitting	incomplete	
NARC-3A8B23	Strap fitting	c.AD1150-1450	Northamptonshire	cast copper alloy swivel	complete	
NCL-738B37	Strap fitting	c.AD1100-1500	Lincolnshire	Copper alloy	Broken, incomplete	
IOW-50FFD3	chain swivel loop	c.1000 - 1100AD	Isle of Wight	Cast copper alloy		
WMID-4E7A93	swivel harness fitting	medieval	Staffordshire	cast copper-alloy and iron		

YORYM-126AF2	Miniature trefoil brooch	c.1300 -1400	Bolton	Silver gilt	Exact function unknown: may have been used for children, pets or sewn onto fabric	
DENO-27F566	Mount	c.1300 -1400	Langford, Nottinghamshire	Cast copper alloy	Female figure holding bird/ headless baby	
SF-4A8FA1	small conical clapper bell	c.900 - 1200	Barham, Suffolk	Copper alloy	May have been part of rosary, or worn by domestic pet.	
LVPL682	Oval bell	c.1200 -1300	Eden, Cumbria	Copper alloy sheeting	May have been dress ornament, part of pet/hunting dog collar, horse harness.	no image available

Chapter 7: Conclusion

This dissertation has investigated medieval pet-keeping practises and after comparing the archaeological evidence with the wealth of historical literature on the subject, it is clear that pet-keeping was more widespread archaeologically than previously thought in Britain, with a range of species kept as pets. Literary sources and contemporary iconography prove that keeping more unusual animals or birds such as squirrels, parrots, jackdaws and magpies was relatively widespread in Medieval Britain and Europe, despite minimal archaeological evidence from Britain.

Potentially, dead pets were discarded with domestic waste or skinned, which will unfortunately render the remains archaeologically invisible. Absence of evidence is not evidence of absence: I would argue that even if the physical evidence is not present in the archaeological record, it is important to remain open to the possibility that these practises were still happening even if they may leave no trace archaeologically with current methods, especially considering the literary evidence. However, analysis of the carpometacarpi can reveal trauma from a surgical procedure known as pinioning used to limit a bird's ability to fly as a more long-term alternative to clipping a birds wings; if the species exhibiting this trauma were known to be kept in cages and tamed then this bird was probably a pet. This could be helpful for learning more about human/animal relationships as potentially a bird which had this procedure done may have been handled more often and potentially allowed more freedom as the chance of escape was minimised. Additionally, isotope analysis can identify if animals or birds were being fed a diet high in meat or fish, or if they were fed table scraps (Pigière *et al*, 2012, 1022); this may help identify companion animals, who typically ate a richer diet than their counterparts.

As shown from the PAS database Medieval and Post-Medieval birdfeeder research and the prevalence of birdcages in contemporary imagery, birdcages from Medieval Britain did exist, but either they aren't being recognised as bird cages, only small parts of the cages are surviving making identification difficult, or they aren't surviving due to insufficient preservation conditions. However, any excavations that have excellent preservation conditions for organic material may yet discover a Medieval birdcage. Future research could address the usage bird feeders in the PAS database and see if there are any similar artefacts in Europe. In addition to this, the more unusual companion species still need to be studied in more detail and further cross-discipline study would be highly beneficial to broadening our understanding of this subject, which currently focuses on dogs and cats.

The species of companion animals that have the best archaeological evidence for pet-keeping are jackdaws, and there is also significant potential for further investigation into caged birds kept as pets in Medieval Britain. Jackdaws are prevalent on British urban sites and are known to have been kept as pets in the historical literature (O'Connor, 2003, p.81). In addition to this, jackdaws, based upon the bones and literature, are relatively easy to identify as pet, since they were not eaten (Moreno-García and Pimenta 2010, 77) and not skinned, as opposed to squirrels and rabbits, which are difficult to distinguish from skinning or butchery waste. However, based upon the small finds related to pet-keeping, small caged birds are the best represented pet.

Although there is a large amount of literary evidence that supports the keeping of small animals as pets during this period, there is very little skeletal evidence that suggests that red squirrels and rabbits were kept as pets in urban environments.

Ultimately, the companion animal taxa that are best represented in the archaeological record may not have the best archaeological evidence for pet-keeping: although rabbits and squirrels are often found on Medieval sites, this is mostly in contexts associated with skinning, leatherworking and furriery. It is important to remember that while this does not preclude these animals from being potential companion animals during their lifetime, sadly this does render any emotional significance as a companion animal these animals may have had prior to death archaeologically unrecognisable. Alternately, birds would not be skinned as they do not have fur, although their feathers may have been plucked, so they may be more easily recognisable in the archaeological record.

So far it has been assumed by historians that pet-keeping rose in popularity with the increase of the middle classes in 18th and 19th Century England, due to the industrial revolution (Serpell, 1986, 130). However, this fails to consider that pet-keeping in the Medieval period was more widespread than previously thought and was likely not limited to elites, although lower-status people would have had access to a more limited range of species, rendering evidence of lower-status pet-keeping far more difficult to identify archaeologically. Holmes also argues that "While the historical evidence is strongly in favour of the elite being the dominant pet-keepers, it is likely that the lower classes also kept companion animals, as the acquisition of pets such as dogs or cats would not have been costly" (Holmes, forthcoming, 108). It is probable that they kept pet birds as well. Research into Medieval pet-keeping is becoming more popular, but the area is still under-researched, with the current archaeological consensus no doubt influenced by the strong bias in the historical literature towards

elite pet-keeping habits, which is typical of the literature in general, in that ordinary people are not represented (Brake, 1998, 3). Hopefully this will be able to change.

Bibliography

‘A lady with a pet squirrel, Add MS 42130, f. 33r’ [illustration] n.d. [image online] Luttrell Psalter. Available at: <http://britishlibrary.typepad.co.uk/.a/6a00d8341c464853ef019b0163a284970b-500wi> [Accessed: 19/01/2016]

‘A popinjay in a hanging cage’ [illustration] Image Source: Lilienfeld, Austria, Stiftsbibliothek Codex 151, Condordatiae Caritatis, fol 165V. [image online] <http://tethys.imareal.oeaw.ac.at/realonline/> [Accessed: 12/02/2016]

‘A xiv century peddler hawking wooden birdcages "The Romance of Alexander," Bodleian Library 264’ [illustration] [image online] Available at: Randall Jr., R., H., 1953. ‘A Gothic Bird Cage’ *The Metropolitan Museum of Art Bulletin*. 292 <www.metmuseum.org/pubs/bulletins/1/pdf/3258292.pdf.bannered.pdf> [Accessed: 19/01/2015]

‘Bird in hanging wooden cage 1350’ [illustration] Stiftsbibliothek Codex 151, Condordatiae Caritatis, fol 71v, [image online] <http://www.brandenburg1260.de/heim-21.jpg> [Accessed: 18/01/2015]

‘In the garden a man holds a birdcage, the other probably a tame goldfinch, North Italy, c.1390’. *N Tacuinum sanitatis*, Vienna Austrian National Library, Cod Vindob S. 2644, folio 19v. [illustration]

‘Sparrow’ [illustration] Bodleian Library, MS. Bodley 764, Folio 87r. Available at: <http://bestiary.ca/beasts/beast9068.htm> [Accessed: 15/07/2015]

‘Squirrel Chained to Hutch c. 1382-1394 (Book of Hours, Lat. liturg. f. 3, fol. 74r).’ [illustration] n.d. [image online] Available at: <http://bodley30.bodley.ox.ac.uk:8180/luna/servlet/detail/ODLodl~1~1~46271~114196:Book-of-Hours--Use-of-Rome-?cic=ODLodl~7~7%2CODLodl~6~6%2CODLodl~14~14%2CODLodl~8~8%2CODLodl~23~23%2CODLodl~1~1%2CODLodl~24~24> [Accessed: 19/01/2016]

‘Trapping squirrels Manuscript. M.820.nFol. 052v’ [illustration] *Livres du Roy Modus et de la Royne Ratio* ch. 86. Pierpont Morgan Library. Available at:

<http://corsair.themorgan.org/cgi-bin/Pwebrecon.cgi?BBID=336752> [Accessed: 15/07/2015]

'Woman with squirrel The Ormesby Psalter Bodleian Library MS. Douce 366' [Image online] Available at: <http://bestiary.ca/chimaera/wp-content/images/Bodleian-Douce-366-f131r.jpg> [Accessed: 19/01/2016]

Aberdeen Bestiary, University of Aberdeen, n.d. 'Folio 2v Commentary' <https://www.abdn.ac.uk/bestiary/comment/2v.hti> [Accessed: 30/12/2015]

Aberdeen Bestiary, University of Aberdeen, n.d. 'Folio 47r Illustration detail' [image online] <https://www.abdn.ac.uk/bestiary/jpeg/com_det/birdf47r.jpg> [Accessed: 19/01/2016]

Aberdeen Bestiary, University of Aberdeen, n.d. 'Folio 71V' University of Aberdeen. <http://www.abdn.ac.uk/bestiary/translat/71v.hti> [Accessed: 22/8/2014]

Aberdeen Bestiary, University of Aberdeen, n.d. 'https://www.abdn.ac.uk/bestiary/' <http://www.abdn.ac.uk/> [Accessed: 22/8/2014]

Adamson, M., 2004. *Food in Medieval Times*. Westport: Greenwood.

Albarella, U., Beech, M., Mulville, J., 1997. *The Saxon, Medieval and Post-Medieval Mammal and Bird Bones excavated 1989-91 from Castle Mall, Norwich, Norfolk*. Ancient Monuments Laboratory Report 72/97. Historic Buildings and Monuments Commission for England.

Albertus Magnus, 1999. *On Animals*. translated by: Kitchell, K., Resnick, I. Baltimore. p.1534-6.

Almond, R., 2011. *Medieval Hunting*. Stroud: The History Press.

Andrews-Wilson, L., 2011. 'BROOCH Unique ID: YORYM-126AF2' [photograph] Portable Antiquities Scheme <https://finds.org.uk/images/law/medium/2008%20T.jpg> [Accessed: 31/08/2015]

Andrews-Wilson, L., 2011. 'BROOCH Unique ID: YORYM-126AF2' Portable Antiquities Scheme <https://finds.org.uk/database/artefacts/record/id/213239> [Accessed: 31/08/2015]

Aristotle, 2013. *Delphi Complete Works of Aristotle (Illustrated)*. Delphi Classics.

Ask about Ireland (AAI), 2014 'Dog Collar' [photograph] <http://www.askaboutireland.ie/aai-files/assets/libraries/waterford-museum-of-treasures/reading-room/the-virtual-museum/dog-collar.jpg> [Accessed: 30/08/2015]

Ask About Ireland and the Cultural Heritage Project (AAI), 2015 'Waterford Dog Collar' [photograph] <http://www.askaboutireland.ie/_internal/gxml!0/m6s6aicjogoampxnh1a9dzzq7k4g1nn$pfn6dnfhj7j9fmhkt8tv51cxa3jnvgt> [Accessed: 17/01/2015]

Author Unknown, n.d. 'Squirrel' <http://www.larsdatter.com/squirrels.htm> [Accessed: 15/07/2015]

Bailey, M., 1988. 'The Rabbit and the Medieval East Anglian Economy' <http://www.bahs.org.uk/AGHR/ARTICLES/36n1a1.pdf> [Accessed: 15/07/2015]

Baker, N., 2015. *RSPB Nature Tracker's Handbook*. London: Bloomsbury Publishing.

Bartosiewicz, L., 2005. 'Crane, food, pet and symbol'. In: Grupe, G., Peters, J., (eds) Feathers, Grit and Symbolism. Birds and Humans in the Ancient Old and New Worlds. Documenta Archaeobiologiae 3, Rahden/Westf., Verlag Marie Leidorf, 259-269

Bartosiewicz, L., Gál, E., 2013. *Shuffling Nags, Lame Ducks: the Archaeology of Animal Disease.* Oxford: Oxbow Books.

Basford, F., 2011. 'CHAIN Unique ID: IOW-50FFD3' [photograph] Available at: Portable Antiquities Scheme (PAS) <https://finds.org.uk/images/fbasford/medium/IOW2005-141.JPG> [Accessed: 30/08/2015]

Basford, F., 2011. 'CHAIN Unique ID: IOW-50FFD3' Portable Antiquities Scheme Database. <https://finds.org.uk/database/artefacts/record/id/102427> [Accessed: 30/08/2015]

Basford, F., 2011. 'CHAIN Unique ID: IOW-50FFD3' Portable Antiquities Scheme (PAS) <https://finds.org.uk/database/artefacts/record/id/102427> [Accessed: 30/08/2015]

Bergman-Althouse, L., 2011. '16th Annual Call of the Wild Conference – November 12-13, 2011 Waynesboro, "Anything – Everything Squirrel"'

<http://wildlifecenter.org/sites/default/files/wp/wp-content/uploads/2011/10/Anything-and-Everything-Squirrel_0.pdf > [Accessed: 18/02/2016]

Biggs, 2013 'A lady with a pet squirrel, Add MS 42130, f. 33r' [illustration] [image online] <http://britishlibrary.typepad.co.uk/digitisedmanuscripts/2013/11/marginali-yeah-take-2-the-incomparable-luttrell-psalter.html> [Accessed: 19/01/2016]

Binford, L., 2014. *Bones: Ancient Men and Modern Myths*. New York: Academic Press.

Bodley, J., 2011. *Cultural Anthropology: Tribes, States, and the Global System*. Plymouth: Rowman Altamira.

Bodson, L., 2000 'Motivations for pet-keeping in Ancient Greece and Rome: a preliminary survey' In: Podberscek, A., Paul, E., Serpell, J., (eds) *Companion Animals & Us: Exploring the Relationships between people and their pets*. Cambridge: Cambridge University Press.

Boehrer, B., 2010. *Parrot Culture: Our 2500-Year-Long Fascination with the World's Most Talkative Bird*. Philadelphia: University of Pensylvania Press.

Bond, J. and O'Connor, T., 1989. *Bones from Medieval Deposits at 16-22 Coppergate*, The Archaeology of York 15/5, London, Council for British Archaeology.

Bourgain, La Chaire francaise au XIIe siècle, [unpublished sermon] Bibliothèque nationale de France, Ms Lat. 14934, fol.82r. p.12.

Boydell and Brewer, n.d. 'Medieval Pets Dr Kathleen Walker-Meikle' <http://www.boydellandbrewer.com/content/docs/qa_medieval_pets_k_walker-meikle.pdf> [Accessed: 16/06/2015]

Bradley, K., 1998 'The Sentimental Education of the Roman Child: the Role of Pet-Keeping' *Latomus* **57** 3 p.523-557.

Brake, W., 1998. *Shaping History: Ordinary People in European Politics, 1500-1700*. University of California Press.

British Library, n.d. 'Books of Beasts in the British Library: the Medieval Bestiary and its context'

<https://www.bl.uk/catalogues/illuminatedmanuscripts/TourBestiaryOrigins.asp> [Accessed: 30/12/2015]

British Museum, n.d. 'finger-ring' [photograph] Available at: <http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&assetid=210388001&objectid=51115> [Accessed: 19/01/2015]

British Museum, n.d. 'floor-tile' [photograph] Available at: <http://www.britishmuseum.org/collectionimages/AN00207/AN00207690_001_l.jpg?width=304> [Accessed: 15/07/2015]

British Renaissance Poetry (BRP), 2011 'John Skelton Literary Biography' <http://britrenpoetry.wikidot.com/john-skelton> [Accessed: 29/07/2015]

British Trust for Ornithology (BTO), 2012. 'Birdlife in your garden: The Jackdaw' <https://www.bto.org/sites/default/files/u23/images/Ambassadors/john_arnfield_articles/biyg_2012_07_jackdaw.pdf> [Accessed: 20/02/2016]

Burrill, C., 2010. 'Mount Unique ID: DENO-27F566' [photograph] Available at: <https://finds.org.uk/images/cburrill2/medium/E6916_Med_Mount_Falconer.jpg> [Accessed: 17/01/2016]

Burrill, C., 2010. 'Mount Unique ID: DENO-27F566' <https://finds.org.uk/database/artefacts/record/id/390423> [Acccessed: 28/10/2015]

Burton Russell, J., 1972. *Witchcraft in the Middle Ages*. New York: Cornell University Press.

Chagnon, N., 2012. *The Yanomamo*. (sixth ed.) Belmont: Cengage Learning.

Charman, A., 2015. 'Bird Feeder Unique ID: PUBLIC-2F0163' <https://finds.org.uk/database/artefacts/record/id/707958> [Accessed: 27/10/2015]

Claassens, G., Verbeke, W., 2006. *Medieval Manuscripts in Transition: Tradition and Creative Recycling*. Leuven: Leuven University Press.

Clark, W., 2006. *A Medieval Book of Beasts: The Second-family Bestiary: Commentary, Art, Text and Translation*. Woodbridge: Boydell Press.

Clutton-brock, J., 1995. Origins of the dog: domestication and early history. In Serpell, J., (ed) 'the Domestic Dog; its evolution, behaviour and Interactions with People'. Cambridge: Cambridge University Press. p.7-20.

Crabtree, P., 2013. 'A Note on the Role of Dogs in Anglo-Saxon Society: Evidence from East Anglia' *International Journal of Osteoarchaeology* Available at: <http://onlinelibrary.wiley.com/doi/10.1002/oa.2358/pdf> [Accessed: 26/2/2014]

Cummins, B., 2013. 'Chapter Eleven By our side: assistance dogs and the enabling of the disabled' In: *Our Debt to the Dog: How the Domestic Dog Helped Shape Human Societies*. Durham: Carolina Academic Press.

Dan, H., 2008. 'Tips On Keeping a Pet Squirrel' <http://newsforsquirrels.blogspot.co.uk/p/tips-for-keeping-squirrel-as-pet-if-you.html> [Accessed: 28/07/2015]

Daubney, A., 2011. 'VESSEL Unique ID: LIN-A6D801' <https://finds.org.uk/database/artefacts/record/id/108185> [Accessed: 01/11/2015]

Davis, S., 1978 'The Natufian skeleton with its puppy' Image taken from Davis, S., Valla, F., 1978. 'Evidence for domestication of the dog 12,000 years ago in the Natufian of Israel' *Nature* **276** p.608.

Davis, S., 2012. *The Archaeology of Animals*. London: Routledge.

Davis, S., DeMello, M., 2003. *Stories Rabbits Tell: A Natural and Cultural History of a Misunderstood Creature*. New York: Lantern Books.

Davis, S., Valla, F., 1978. 'Evidence for domestication of the dog 12,000 years ago in the Natufian of Israel' *Nature* **276** p.608-10

Dell'Amore, C., 2012. 'Guinea Pigs Were Widespread as Elizabethan Pets: South American rodents raised by several social classes, study suggests.' <http://news.nationalgeographic.com/news/2012/01/120207-guinea-pigs-europe-south-america-pets-animals/> [Accessed: 30/09/2014]

Dobbs, M., 2013. *Down with Big Brother: The Fall of the Soviet Empire*. London: Bloomsbury.

Driscoll, C., MacDonald, D., O'Brien, S., 2009. 'From wild animals to domestic pets, an evolutionary view of domestication' *PNAS* **106** p.9971–9978.

Dubey, J., Hodgin, E., Hamir, A., 2006. 'Acute Fatal Toxoplasmosis in Squirrels (Sciurus carolensis) with Bradyzoites inVisceral Tissues' *Journal of Parasitology* **93** 2 p.658-9.

Dyfedd Archaeological Trust, 2013 'Medieval and Early Post-Medieval Rabbit warrens: a Threat-related Assessment 2013' <http://www.dyfedarchaeology.org.uk/projects/rabbitwarrenreport2013.pdf> [Accessed: 15/07/2015]

Egan, G., 1998. *The Medieval Household: Daily Living c.1150-c.1450 (Medieval Finds from Excavations in London).* London: The Stationery Office, p.296.

Egan, G., 2005. *Material Culture in London in an Age of Transition: Tudor and Stuart Period Finds c. 1450-c. 1700 from Excavations at Riverside Sites in Southwark*. London: MoLAS monograph.

English Heritage, 2014. 'Animal Bones and Archaeology: Guidelines for best Practise' <http://www.english-heritage.org.uk/publications/animal-bones-and-archaeology/animal-bones-and-archaeology.pdf> [Accessed: 10/12/2014]

Evans, E., 1906. *The Criminal Prosecution and Capital Punishment of Animals*. New Jersey: The Lawbook Exchange.

Ewart, E., 2013, *Space and Society in Central Brazil: A Panará Ethnography*. London: Bloomsbury Academic.

Fadlalla, M., 2005. *The Problem of Dar Fur*. Lincoln: iuniverse.

Fairnell, E., 2003. *The utilisation of fur-bearing animals in the British Isles A zooarchaeological hunt for data.* University of York. [Masters Thesis] Available at: <https://www.york.ac.uk/media/archaeology/images/people/faces-gradstudents/publicationpdfs/complete%20msc.pdf> [Accessed: 15/02/2016]

Fairnell, E., 2008. '101 ways to skin a fur-bearing animal: the implications for zooarchaeological interpretation' In: Cunningham, P., Heeb, J., Paardekooper, R., (eds) *Experiencing Archaeology by Experiment*. Oxbow: Oxford. 47-60.

Fleming, R., 2011. ‘Land use and people’ In: Crick, J., van Houts, E., (eds) *A Social History of England, 900–1200*. Cambridge: Cambridge University Press, 33.

Flux, J., Angermann, R., 1990. ‘Chapter Four: The Hares and Jackrabbits’. In: Chapman, J., Flux, J., (eds) *Rabbits, Hares and Pikas: Status Survey and Conservation Action Plan*. Gland: IUCN (International Union for Conservation of Nature and Natural Resources)

Forester,T., White, T. 2000. *Giraldus Cambrensis: The Topography of Ireland.* Cambridge: Parentheses Publications.

Forestry Commission, 2014. ‘Red squirrel’ <http://www.forestry.gov.uk/forestry/redsquirrel> [Accessed: 29/07/2015]

Fosbroke, T., 1825. *Encyclopædia of Antiquities: And Elements of Archaeology, Classical and Mediæval*, Volume 2. London: J. Nichols and Son.

Gál, E., 2013. ‘Pathological Changes in Bird Bones’ In: Bartosiewicz, L., (ed) *Shuffling Nags, Lame Ducks: The Archaeology of Animal Disease*. Oxford: Oxbow Books.

Ganim, J., 2009. ‘Changes in Critical Response and Approaches’ In: Kline, D., (ed) *The Medieval British Literature Handbook*. New York: A&C Black.

Geake, H., 2014. ‘BIRD FEEDER Unique ID: SF4727’ <https://finds.org.uk/database/artefacts/record/id/19328> [Accessed: 01/11/2015]

Goodland, R., 2013. *Ecological Sustainability and Integrity: Concepts and Approaches*. Springer Science & Business Media.

Grant, J., Gorin, S., Fleming, N., 2015. *The Archaeology Coursebook: An Introduction to Themes, Sites, Methods and Skills*. London: Routledge.

Gray, D., 1992. ‘'Notes of Some Medieval Mystical, Magical and Moral Cats’ In: Phillips, H., (ed) *Langland, the mystics, and the medieval English religious tradition*. Cambridge.

Grier, K., 2006. *Pets in America: A History*. University of North Carolina Press.

Grieve, A., 2012. ‘The Human-Dog Relationship in Early Medieval England and Ireland (c. AD 400-1250)’ University of Southampton, PHD thesis

<http://eprints.soton.ac.uk/367062/1.hasCoversheetVersion/Amanda%20Grieve%20-%20Early%20Medieval%20Dogs.pdf> [Accessed: 30/08/2015]

Grünewald, M., n.d. 'Donor with a birdcage' [Image online] Web Gallery of Art (WGA), <http://www.wga.hu/art/g/grunewal/3/01benefa.jpg> [Accessed: 30/08/2015]

Gutzwiller, K., 2012. 'Catullus and the Garland of Meleager' In: Quesnay, I., Woodman, A., (eds) *Catullus: Poems, Books, Readers*. Cambridge: Cambridge University Press.

Haglund, W., Sorg, M., 2001. *Advances in Forensic Taphonomy: Method, Theory, and Archaeological Perspectives*. New York: CRC Press.

Hans Holbein the Younger, 1526-8 'A Lady with a Squirrel and a Starling (Anne Lovell?)' [oil painting] [image online] Available at: <http://www.nationalgallery.org.uk/paintings/hans-holbein-the-younger-a-lady-with-a-squirrel-and-a-starling-anne-lovell> [Accessed: 19/01/2015]

Haraway, D., 2003. *The Companion Species Manifesto: Dogs, People and Significant Otherness*. Chicago: University of Chicago Press.

Harcourt, R. 1974. 'The dog in prehistoric and early historic Britain' *Journal of Archaeological Science* **1** 2.

Harkness, J., Turner, P., VandeWoude, S., Wheler, C., 2013. *Harkness and Wagner's Biology and Medicine of Rabbits and Rodents*. Iowa: Wiley-Blackwell.

Hart-Davis, D., 2005. *Fauna Britannica: the practical guide to wild and domestic creatures of Britain*. London: Angus.

Hartmann, S., 2007. *Fauna and Flora in the Middle Ages: Studies of the Medieval Environment and Its Impact on the Human Mind Papers Delivered at the International Medieval Congress, Leeds, in 2000, 2001 and 2002*. New York: Peter Lang.

Heck, C., Cordonnier, R., 2012. *The Grand Medieval Bestiary: Animals in Illuminated Manuscripts*. New York: Abbeville Press.

Herepath, N., 2011 'CROTAL Unique ID: LVPL682' <https://finds.org.uk/database/artefacts/record/id/7025> [Accessed: 12/02/2016]

Hirschberg, R., 2012. ‘Aichorn, musio und brâkelin: Heim- und Gesellschaftstiere im Mittelalter’ (Expanded version of original article from *Journal of living history* **103** p.53-57) Marca Brandenburgensis Consortium. <http://www.brandenburg1260.de/heimtiere.html> [Accessed: 18/10/2015]

Historic Royal Palaces Tower of London (HRPTOL), 2014 ‘The history of the Royal Menagerie’ <http://www.hrp.org.uk/TowerofLondon/Stories/Palacehighlights/RoyalBeasts/Menageriehistory> [Accessed: 18/9/2014]

Hoage, Roskell and Mansour, 1996, ‘Menageries and Zoos to 1900’ In: Hoage, R., and Deiss, W., New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century. Baltimore: John Hopkins University Press p.8-18.

Hoffman, R., 2014. *An Environmental History of Medieval Europe*. Cambridge: Cambridge University Press.

Holmes, M., forthcoming. *Southern England: A Review of Animal Remains from Saxon, Medieval and Post Medieval Archaeological Sites*. London: English Heritage Research Report.

Homer, *The Iliad*. Book XXIII, 170.

Homer, *The Odyssey*. 2003. Translated by: Riev, E., Penguin Classics.

Huey, R., 1994. ‘Survival Skills’ In: Halliday, T., (ed) *Animal Behaviour*. Sydney: University of Oklahoma Press.

Intangible Heritage, n.d. ‘St. Columbán of Bangor (Columbanus / Columba)’ <http://www.northdowntourism.com/Documents/Christian-Heritage/North-Down-Christian-Heritage-Report-_-Historical.aspx> [Accessed: 14/08/2015]

Jennison, G., 1937. *Animals for Show and Pleasure in Ancient Rome*. Manchester: Manchester University Press.

Jerman, J., Weir, A., 2013. *Images of Lust: Sexual Carvings on Medieval Churches*. London: Routledge.

Johnson, J., 2009. *Dogs, Cats, and their people: the place of the family pet and attitudes about pet keeping*. Masters Thesis. University of Waterloo, Canada.

Johnston, R., 2011. *All Things Medieval: An Encyclopedia of the Medieval World, Volume 1*. Santa Barbara: ABC – CLIO.

Jones, R., 2013. *The Medieval Natural World*. Oxon: Routledge.

Kalhagen, A., n.d. 'Ways to Give Your Bird More Exercise: Providing Adequate Exercise for Parrots' <http://birds.about.com/od/birdhealth/tp/Ways-To-Give-Your-Bird-More-Exercise.htm> [Accessed: 28/10/2015]

Kendall, B., 2008. 'Back to Chernobyl, Ukraine' in: Grant, T., (ed) *More from Our Own Correspondent*. London: Profile Books.

Kors, A., Peters, E., 2001. *Witchcraft in Europe, 400-1700: A Documentary History*. Philadelphia: University of Pennsylvania Press.

Laakso, L., 2011. 'BIRD FEEDER Unique ID: BH-894AF1'

Larsdatter, K., n.d. 'Material Culture Pages: Birdcages' <http://www.larsdatter.com/birdcages.htm> [Accessed: 15/08/2015]

Larsdatter, K., n.d. 'Material Culture Pages: Squirrels' <http://www.larsdatter.com/squirrels.htm > [Accessed: 01/11/2015]

Lazenby, F., 1947. 'Greek and Roman Household Pets' *The Classical Journal* **44** 4 p.299-307.

Leeds Castle, 2015. 'The Dog Collar Museum' <http://www.leeds-castle.com/Attractions/The+Dog+Collar+Museum> [Accessed: 30/08/2015]

Lever, C., 2009. *Naturalized Animals of Britain and Ireland: Mammals, birds, reptiles, amphibians and fish*. London: New Holland.

Leyser, H., 1996. *Medieval Women: a Social History of Women in England 450-1500*. London: Phoenix Press.

Link, R., 2004. *Living with Wildlife in the Pacific Northwest*. Washington: University of Washington Press.

Lobell, J., Powell, E., 2010 'Constant Companions' *Current Archaeology* **63** 5.

Luff, R., 1993. *Colchester Archaeological Report 12: Animal bones from excavations in Colchester, 1971-85*. Colchester: Colchester Archaeological Trust.

Lutwack, L., 1994. *Birds in Literature*. Gainesville: University Press of Florida.

MacKinnon, 2010. ‘‘Sick as a dog’: zooarchaeological evidence for pet dog health and welfare in the Roman world’ *World Archaeology* **42** 2 p.290-309.

MacKinnon, M., 2013 ‘Pack animals, pets, pests and other non-human beings’. In: Erdkamp, P., (ed), *The Cambridge Companion to Ancient Rome*. Cambridge: Cambridge University Press.

Majok, A., Schwabe, C., 1996. *Development Among Africa's Migratory Pastoralists*. Westport: Greenwood Publishing Group.

Mandeville, J., 1900. *The Travels of Sir John Mandeville*. London: Macmillan and Co. Ch.30.

Manning, C., 1981. *On Seneca's "Ad Marciam"*. Leiden: Brill Publishing.

Marshall, P., van der Plicht, J., Cook, G. T., Grootes, P. M., Beavan Athfield, N. & Buzinny, M. (2010) Scientific dating evidence. In G. Thomas, *The later Anglo-Saxon settlement at Bishopstone: A downland manor in the making* (pp. 196-200). York: Council for British Archaeology Research Report 163. Marshall Thomas, E., 1996. ‘Foreword’ In: Beck, A., Honori Katcher, A., (eds) *Between Pets and People: The Importance of Animal Companionship*. Chicago: Purdue University Press

Meleager, 1975. *The Poems of Meleager*. Translated by: Whigham, P., Jay, P. Los Angeles: University of California Press.

Melson, G., 2009. *Why the Wild Things Are: Animals in the Lives of Children*. Cambridge: Harvard University Press.

Melson, G., Peet, S., Sparks, C., 1991. ‘Children's Attachment to Their Pets: Links to Socio-Emotional Development’ *Children's Environments Quarterly* **8** 2 p.55-65.

Metropolitan Museum of Art (MMOA), 2014. ‘Birdcage’ [Image online] The Collection Online. <http://www.metmuseum.org/collection/the-collection-online/search/471434> [Accessed: 27/10/2015]

Metropolitan Museum of Art (MMOA), 2014. ‘Birdcage’ The Collection Online. <http://www.metmuseum.org/collection/the-collection-online/search/471434> [Accessed: 27/10/2015]

Metropolitan Museum of Art (MMOA), n.d. 'Birdcage' The Collection Online. <http://images.metmuseum.org/CRDImages/cl/web-large/cdi52-121-1.jpg> [Accessed: 17/10/2015]

Moreno-García, M., Pimenta, C., 2010 'Beyond chicken: avian biodiversity in a Portuguese late medieval urban site' In: W. Prummel, J.T. Zeiler & D.C. Brinkhuizen (eds) *Birds in Archaeology*.

Morey, D., 2010. *Dogs: Domestication and the Development of a social bond*. New York: Cambridge University Press.

Morrone, M., 2012. *Marc Morrone's Ask the Bird Keeper*. Irvine: Bow tie press.

Mott, M., 2003. 'The Perils of Keeping Monkeys as Pets' National Geographic. <http://news.nationalgeographic.com/news/2003/09/0916_030916_primatepets.html > [Accessed: 10/08/2015]

Mührenberg, D., Falk, A., Cowl, Pritschholz, Trippe. 2001. *Mit Gugel, Pritschholz und Trippe - Alltag im mittelalterlichen Lübeck* 2/3 1997/1999 (Everyday life in medieval Lübeck. Archaeological Society of Lübeck). p.59.

Museum of London (MOL), n.d. 'Bird Trough' <http://archive.museumoflondon.org.uk/collections-research/collections-online/object.aspx?objectID=object-29538&start=513&rows=1> [Accessed: 30/08/2015]

Museum of London (MOL), n.d. 'Bird Trough' ID no: 84.136/25 [photograph] Available at: <http://col4.museumoflondon.org.uk/mediaLib/166/media-166793/large.jpg> [Accessed: 30/08/2015]

National Gallery, Hans Holbien. 'A Lady with a Squirrel and a Starling (Anne Lovell?)' [oil painting] [digital image] <http://www.nationalgallery.org.uk/upload/img/holbein-lady-squirrel-starling-anne-lovell-NG6540-fm.jpg > [Accessed: 14/02/2016]

O'Connor, T., 1984. *Selected Groups of Bones from Skeldergate and Walmgate*. Volume 15/1: The Animal Bones. York: Council for British Archaeology.

O'Connor, T., 1988. *Bones from the General Accident Site, Tanner Row*. Volume 15/2: The Animal Bones. York: Council for British Archaeology.

O'Connor, T., 1989. *Bones from Anglo-Scandinavian Levels at 16-22 Coppergate*. Volume 15/3: The Animal Bones. York: Council for British Archaeology.

O'Connor, T., 2003. *The Analysis of Urban Animal Bone Assemblages: A Handbook for Archaeologists*. Volume 19: Principles and Methods. York: Council for British Archaeology.

O'Connor, T., 2008. *The Archaeology of Animal Bones*. Stroud: Sutton.

O'Regan, H., 2015 Personal correspondence [email] 20/09/2015

Ohio State University (OSU) College of Veterinary Science 2015. 'Veterinary Autopsy Resource Guide' <https://vet.osu.edu/biosciences/applied-pathology/veterinary-autopsy> [Accessed: 15/02/2016]

Ovid, *Fasti Book 6*. p.131-45 translated by Frazer, J., <http://www.theoi.com/Text/OvidFasti6.html> [Accessed: 21/3/2014]

PAS (Portable Antiquities Scheme Database) 2015. 'Database search results bird feeder post medieval' <https://finds.org.uk/database/search/results/q/bird+feeder/sort/broadperiod/objectType/BIRD+FEEDER/broadperiod/POST+MEDIEVAL> [Accessed: 01/11/2015]

PAS (Portable Antiquities Scheme Database) 2016. '1,151,967 objects within 724,711 records. Database welcome' <https://finds.org.uk/database> [Accessed: 12/02/2016]

Pet Food Manufacturers Association (PFMA) 2014. 'Pet Population 2014' <http://www.pfma.org.uk/pet-population-2014/> [Accessed: 27/8/2014]

Pet Food Manufacturers Association (PFMAa) 2013. 'Pet Population 2013' <http://www.pfma.org.uk/pet-population/> [Accessed: 27/8/2014]

Pet Food Manufacturers Association (PFMAb) 2013. 'How many dogs and cats are there in the UK?' <http://www.pfma.org.uk/faqs/pet-statstics/> [Accessed: 27/8/2014]

Pets4Homes, 2015. 'How to look after pet birds' <http://www.pets4homes.co.uk/pet-advice/learning-how-to-look-after-pet-birds.html> [Accessed: 28/10/2015]

Pickering, L., Marano, N., Bocchini, J., Angulo, F., 2008 'Exposure to Nontraditional Pets at Home and to Animals in Public Settings: Risks to Children' *Pediatrics* **122** 4 p.876–886.

Pigière, F., Van Neer, W., Ansieau, C., Denis, M., 2012. 'New archaeozoological evidence for the introduction of the guinea pig to Europe' *Journal of Archaeological Science* **39** p. 1020-1024.

Pliny, *Historia naturalis*, Book 8, 81

Plunkett, T., 2011. 'BELL Unique ID: SF-4A8FA1' [image] <https://finds.org.uk/images/splunkett/medium/BRH%20SF-4A8FA1.jpg> [Accessed: 12/02/2016]

Plunkett, T., 2011. 'BELL Unique ID: SF-4A8FA1' <https://finds.org.uk/database/artefacts/record/id/61151> [Accessed: 12/02/2016]

Pluskowski, A., 2015. 'The Castle and the Warren: Medieval East Anglian Fur Culture in Context' In: Bates, D., Liddiard, R., (eds) *East Anglia and Its North Sea World in the Middle Ages*. Woodbridge: Boydell & Brewer. Chapter 7.

Podberscek, A., Paul, E., Serpell, J., 2005. *Companion Animals and Us: Exploring the Relationships Between People and Pets*. Cambridge: Cambridge University Press.

Pond, W., Bazer, F., Rollin, B., 2011. *Animal Welfare in Animal Agriculture: Husbandry, Stewardship, and Sustainability in Animal Production*. Boca Raton: CRC Press.

Poole, K., 2014 'The Contextual Cat: Human–Animal Relations and Social Meaning in Anglo-Saxon England'. *Journal of Archaeological Method and Theory* **22** 3 857-882

Poore, D., Score, D., Dodd, A., 2006. *Excavations at No 4a Merton Street, Merton College, Oxford. The Evolution of a medieval stone house and tenement and an early college property*. Oxoniensia 71: 211-342

Portable Antiquities Scheme <https://finds.org.uk/database/artefacts/record/id/208889> [Accessed: 30/08/2015]

Power, E., 1988. *Medieval English Nunneries, C. 1275 to 1535*. Cambridge: Biblo & Tannen.

Power, E., 2012a. *Medieval People*. New York: Dover Publications.

Power, E., 2012b. *Medieval Women*. Cambridge: Cambridge University Press.

Randall Jr., R., H., 1953. 'A Gothic Birdcage' *The Metropolitan Museum of Art Bulletin*. New Series **11** 10, pp. 286-292. Available at: <www.metmuseum.org/pubs/bulletins/1/pdf/3258292.pdf.bannered.pdf> [Accessed: 19/01/2015]

Rawson, B., 2003. *Children and Childhood in Roman Italy*. Oxford: Oxford University Press.

Read, B.A., 1988. *History Beneath Our Feet*. Braunton: Merlin, p.98, No.606.

Reynolds, A., 2009. *Anglo-Saxon Deviant Burial Customs*. Oxford: Oxford University Press.

Robinson, 1996. 'Foreword' In: Hoage, R., Deiss, W., New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century. London: John Hopkins University Press.

Rockefeller, L., 2012. 'Parrots and Popinjays: a Brief Look at the Role of Companion Birds in Medieval Europe' <https://peersofbeinan.wordpress.com/2014/07/24/parrots-and-popinjays-a-brief-look-at-the-role-of-companion-birds-in-medieval-europe/> [Accessed: 29/07/2015]

RSPCA, 2014. 'What do I need to know before I get a new pet?' <http://kb.rspca.org.au/what-do-i-need-to-know-before-i-get-a-new-pet_19.html> [Accessed: 12/01/2016]

RSPCA, 2016. 'Reptiles and other exotic pets' <http://www.rspca.org.uk/adviceandwelfare/pets/other> [Accessed: 14/02/2016]

Saker, K., 2013. 'Metabolic Bone Disease in Wildlife Species' <http://www.ncwildliferehab.org/conf2013/Handouts/Metabolic%20Bone%20Disease.pdf > [Accessed: 18/02/2016]

Salisbury, J., 2012*. The Beast Within: Animals in the Middle Ages*. Oxon: Routledge.

Sanders, C., 1990. 'The Animal 'Other': Self Definition, Social Identity and Companion Animals'. In: Goldberg, M., Gorn, G., Pollay, R., (eds) *Advances in Consumer Research* **17** p.662-668.

Schwabe, C., 1978. *Cattle, Priests, and Progress in Medicine*. Minneapolis: University of Minnesota Press.

Serjeantson, D., 2009. *Birds*. Cambridge: Cambridge University Press.

Serpell, J., 1986. *In the Company of Animals*. Oxford: Basil Blackwell.

Serpell, J., 1995. *The Domestic Dog: Its Evolution, Behaviour and Interactions with People*. Cambridge: Cambridge University Press.

Serpell, J., 2002. 'Guardian spirits or demonic pets: the concept of the witches familiar in early modern England 1530-1712' In: Creager, A., Chester Jordan, W., (eds) *The animal-human boundary: historical perspectives*. Woodbridge: University of Rochester Press. 156-191.

Sife, W., 2005. *The Loss of a Pet*. Hoboken: John Riley and Sons.

Simon Fraser University (SFU) Museum of Archaeology and Ethnology, 2010. 'Stable Isotopes' <http://www.sfu.museum/forensics/eng/pg_media-media_pg/isotopes/> [Accessed: 18/02/2016]

Simpson, F., 2011. 'BIRD FEEDER Unique ID: LON-216584' <https://finds.org.uk/database/artefacts/record/id/121252> [Accessed: 01/11/2015]

Skelton, J., 'The Book of Phillip Sparrow' <http://www.poetryfoundation.org/poem/174438> [Accessed: 15/07/2015]

Slarke, D., 2012. 'HARNESS FITTING Unique ID: WMID-4E7A93' [photograph] Available at: <https://finds.org.uk/images/dslarke/medium/wag%20swivel%200908%20copy.jpg> [Accessed: 17/01/2015]

Slarke, D., 2012. 'HARNESS FITTING Unique ID: WMID-4E7A93' [photograph] Available at: <https://finds.org.uk/images/thumbnails/210395.jpg> [Accessed: 17/01/2015]

Slarke, D., 2012. 'HARNESS FITTING Unique ID: WMID-4E7A93' Portable Antiquities Scheme <https://finds.org.uk/database/artefacts/record/id/244195> [Accessed: 31/08/2015]

Smith, B., 1994. *Homosexual Desire in Shakespeare's England: A Cultural Poetics*. London: University of Chicago Press.

Smith, I., 2008. 'Mammal, bird and amphibian bones' In: Garner, D., (ed) *Excavations at Chester: 25 Bridge Street, 2001: two thousand years of urban life in microcosm*. Chester City Council.

Smith, K., Smith, K., D'Auria, J., 2012. 'Exotic Pets: Health and Safety Issues for Children and Parents' *Journal of Pediatric Health Care* **26** 2, p.2–6
Society: Evidence from East Anglia' *International Journal of Osteoarchaeology* Available at: <http://onlinelibrary.wiley.com/doi/10.1002/oa.2358/pdf> [Accessed: 26/2/2014]
Sommerville, J., 2012. 'Faculty of History: Witchcraft' University of Wisconsin-Madison <http://faculty.history.wisc.edu/sommerville/367/367-131.htm> [Accessed: 22/8/2014]

Sommerville, J., 2012. 'Faculty of History: Witchcraft' University of Wisconsin-Madison <http://faculty.history.wisc.edu/sommerville/367/367-131.htm> [Accessed: 22/8/2014]

Spear, V., 2005. *Leadership in Medieval English Nunneries*. Woodbridge: Boydell Press.

Spitzer, L., 1950. 'On the Etymology of Pet', *Language* **26** *4*, p.533–8

Steinmetz, G., 2011. 'Dinka Cattle Camp, Sudan' [photograph] Available at: <http://images.nationalgeographic.com/wpf/media-live/photos/000/327/cache/dinka-cow-sudan_32751_990x742.jpg> [Accessed: 1/2/2015]

Stephens, W., 2003. *Demon lovers: Witchcraft, sex and the crisis of belief.* London: University of Chicago Press.

Stockard, E., 2015 'Who was Jane Scrope?' In: Pearce, J., Risvold, W., Dixon, N., (eds) *Renaissance Papers 2014*. Suffolk: Boydell & Brewer p.1-16.

Stresemann, E., 1975. *Ornithology from Aristotle to the Present*. Cambridge: Harvard University Press.

Strid, L., 2011a. 'Mammal and Bird Bone' In: Ford, B., Teague, S., Biddulph, E., Hardy, A., Brown, L., (Eds) *Winchester, A City in The Making: Archaeological excavations between 2002 and 2007 on the sites of Northgate House, Staple Gardens and the former Winchester Library, Jewry St.* Oxford Archaeology Monograph 12. p.339-361

Strid, L., 2011b. 'Section 11 Mammal and Bird Bones' [digital copy] In: Ford, B., Teague, S., Biddulph, E., Hardy, A., Brown, L., (Eds) *Winchester, A City in The Making: Archaeological excavations between 2002 and 2007 on the sites of Northgate House,*

Staple Gardens and the former Winchester Library, Jewry St. Oxford Archaeology Monograph 12.

Sykes, N., 2006. 'The Impact of the Normans on hunting practises in England' In: Woolgar, C.M., Serjeantson, D., Waldron, T., (eds) *Food in Medieval England*. Oxford: Oxford University Press. P.162-175.

Sykes, N., 2014. *Beastly Questions: Animal Answers to Archaeological Issues*. London: Bloomsbury Academic.

Tedeschi, P., Fine, A., Helgeson, J., 2010, 'Assistance Animals: their evoking role in psychiatric service applications' In: Fine, A., (ed) *Handbook on Animal-Assisted Therapy: Theoretical Foundations and Guidelines for Practice*. London: Academic Press. 421-440.

The Aberdeen Bestiary (TAB), n.d. 'Folio 46v Translation and Transcription' <https://www.abdn.ac.uk/bestiary/translat/46v.hti> [Accessed: 29/07/2015]

The Aberdeen Bestiary (TAB), n.d. 'Folio 47r Illustration detail' <https://www.abdn.ac.uk/bestiary/comment/47rbirdf.hti> [Accessed: 29/07/2015]

The Goodman of Paris (2006). *The Goodman of Paris (Le Ménagier de Paris): A Treatise on Moral and Domestic Economy by a Citizen of Paris, C.1393*. Translated by: Power, E., Woodbridge: Boydell Press.

The Medieval Bestiary (TMB), 2011a. 'Blackbird' <http://bestiary.ca/beasts/beast531.htm> [Accessed: 29/07/2015]

The Medieval Bestiary (TMB), 2011b. 'Jay' <http://bestiary.ca/beasts/beast543.htm> [Accessed: 29/07/2015]

The Medieval Bestiary (TMB), 2011c. 'Parrot' <http://bestiary.ca/beasts/beast235.htm> [Accessed: 29/07/2015]

The Medieval Bestiary (TMB), n.d. 'A parrot in a tree, with the usual red band around its neck.' Bodleian Library, MS. Douce 151, Folio 52v [image online] <http://bestiary.ca/beastimage/img9271.jpg> [Accessed: 19/01/2016]

The Medieval Bestiary (TMB), n.d. ‘A parrot, rampant. It is wearing a collar of bells (?), suggesting it is a captive bird.’ Kongelige Bibliotek, Gl. kgl. S. 1633 4º, Folio 33v [image online] <http://bestiary.ca/beastimage/img337.jpg> [Accessed: 19/01/2016]

The Medieval Bestiary (TMB), n.d. ‘Koninklijke Bibliotheek, KB, KA 16, Folio 53r. Two rabbits, one appearing to thumb his nose at the other.’ [illustration] [image online] <http://bestiary.ca/beastimage/img5155.jpg> [Accessed: 19/01/2016]

The Medieval Bestiary (TMB), n.d. ‘Several rabbits on a hill riddled with their tunnels. A white hunting animal (dog?) enters one of the tunnels.’ [image online] <http://bestiary.ca/beastimage/img4484.jpg> [Accessed: 19/01/2016.

The Medieval Bestiary (TMB), n.d. ‘The jay or jackdaw is a noisy bird.’ Bodleian Library, MS. Bodley 764, Folio 68r. [image online] <http://bestiary.ca/beastimage/img9039.jpg> [Accessed: 19/01/2016]

The National Gallery (TNG), n.d. ‘A Lady with a Squirrel and a Starling (Anne Lovell?) about 1526-8, Hans Holbein the Younger’ <http://www.nationalgallery.org.uk/paintings/hans-holbein-the-younger-a-lady-with-a-squirrel-and-a-starling-anne-lovell> [Accessed: 19/01/2015]

Thomas R. 2005b. Perceptions versus reality: changing attitudes towards pets in medieval and post-medieval England, pp. 95-105, in Plukowski A. (ed.), Just Skin and Bones? New Perspectives on Human-Animal Relations in the Historic Past. BAR International Series 1410. Archaeopress, Oxford.

Thomas, R., 2005a. Animals, Economy and Status: Integrating Zooarchaeological and Historical Data in the Study of Dudley Castle, West Midlands (c.1100-1750). BAR 392.

Trimming, P., 2011 ‘A red squirrel in the forest (Sciurus vulgaris)’ [photograph] Available at: <http://www.flickr.com/photos/peter-trimming/6583159839/> [Accessed: 18/06/2015]

Tykot, R., 2006. ‘Isotope Analyses and the Histories of Maize’ <http://luna.cas.usf.edu/~rtykot/10%20Tykot.pdf> [Accessed: 18/02/2016]

UK Animal Welfare Act (UKAWA), 2006. Available at: Legislation.gov.uk <http://www.legislation.gov.uk/ukpga/2006/45> [Accesssed: 10/05/2015]

Veale, E., 'The Rabbit in England' <http://www.bahs.org.uk/AGHR/ARTICLES/05n2a3.pdf> [Accessed: 15/07/2015]

Vermeule, E., 1979, *Aspects of Death in Early Greek Art and Poetry*. Berkley: University of California Press.

Walker-Meikle, K., 2008. 'Late medieval pet keeping: Gender, status and emotions.' Doctoral Thesis, University College London. <http://discovery.ucl.ac.uk/1446154/1/U593483.pdf> [Accessed: 05/08/2015]

Walker-Meikle, K., 2011. *Medieval Cats*. British Library Publishing Division.

Walker-Meikle, K., 2012. *Medieval Pets*. Woodbridge: Boydell Press.

Walker-Meikle, K., 2013. *Medieval Dogs*. British Library Publishing Division

Warry, J., 1988. 'The Ancient History of Rabbits' *The Local Historian* **18** 1 (British Association for local history) p.13-15.

Waterford Treasures, 2015. 'The oldest dog collar in Ireland' <http://www.waterfordtreasures.com/reginalds-tower/whats-inside/dog-collar> [Accessed: 30/08/2015]

Watters, J., 2011. 'BIRD FEEDER Unique ID: BH-1A17F3' Portable Antiquities Scheme. <https://finds.org.uk/database/artefacts/record/id/189942> [Accessed: 31/08/2015]

Werness, H., 2006. *Continuum Encyclopedia of Animal Symbolism in World Art*. New York: A & C Black.

Wiedemann, T., 2014. *Adults and Children in the Roman Empire*. London: Routledge.

Williamson, T., 2006. *The Archaeology of Rabbit Warrens*. Princes Risborough: Shire Publications.

Williamson, T., 2007. *Rabbits, Warrens & Archaeology*. Stroud: Tempus Publishing.

Wingert, J., 1999. 'Re: What is the difference between a rabbit and a hare?' <http://www.madsci.org/posts/archives/dec99/946002744.Zo.r.html> [Accessed: 28/07/2015]

Wood, J., 1999. *Wooden Images: Misericords and Medieval England*. London: Fairleigh Dickinson Univ Press.

Woodard, C., n.d. 'Outline of Veterinary Skeletal Pathology Chapter 2 - Bone, Pathologic Conditions' <http://www.cldavis.org/woodard_bone/text/2_3.htm> [Accessed: 18/02/2016]

Woolgar, C., 1992. *Household accounts from medieval England*, Volume 1. Oxford: OUP.

Yapp, B., 1982. *Birds in Medieval Manuscripts*. New York: Schocken.

Zeeland, Y., Spruit, B., Rodenburg, T., Riedstra, B., van Hierden, Y., Buitenhuis, B., Mechiel Korte, S., Lumeija, J., 2009. 'Feather damaging behaviour in parrots: A review with consideration of comparative aspects' *Applied Animal Behaviour Science* **121** 2 p.75-95.