

TORTOISES AND THE EXOTIC ANIMAL TRADE IN BRITAIN FROM MEDIEVAL TO 'MODERN'

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Introduction

In 1611, Thomas Coryat of Odcombe, Somerset, noted in his account of a five-month journey undertaken three years previously through Europe that: "Amongst many other strange fishes that I have observed in their market places [Venice], I have seen many Torteises [sic], whereof I never saw but one in all England" (Coryat 1611: 395). By the late 19th century, however, the importation of tortoises into Britain had become a major commercial enterprise. Henry Mayhew writing about the street sellers of tortoises in London in his 1861 book *London Labour and the London Poor* observed that (Mayhew 1861: 80):

"The number of tortoises sold in the streets of London is far greater than might be imagined, for it is a creature of no utility, and one which is inanimate in this country for half its life.

Of live tortoises, there are 20,000 annually imported from the port of Mogadore in Morocco.

They are a freight of which little care is taken, as they are brought over principally as ballast in the ship's hold, where they remain torpid.

They are bought for children and to keep in gardens [...] and when properly fed on lettuce leaves, spinach, and similar vegetables, or on white bread sopped in water, will live a long time. If the tortoise be neglected in a garden and no access to his favourite food he will eat any green thing that comes in his way and so may commit ravages."

My intention in this article is to track the expansion of the trade in tortoises (but not tortoiseshell) from the medieval period through to the late 19th century and contextualise this against the backdrop of the trade in exotic animals and the rise of pet keeping, using a combination of written sources and zooarchaeological evidence (the analysis of animal bones from archaeological sites).

Where are the tortoises?

Thomas Coryat's claim that tortoises were absent in Britain in the early 17th century is borne out by current evidence: in the medieval period, tortoises are not documented as pets (Walker-Meikle 2012) and no tortoise bones have been recovered from archaeological sites. The latter is somewhat surprising given the enormous number of analysed animal bone assemblages with occupation spanning this period (for central England see Albarella and Pirnie 2008) and the fact that archaeological evidence exists for the movement of other animals. Such movements occurred for a number of reasons: animals were introduced to 'improve' local livestock, for economic or social benefit and as exotics/curiosities (after Albarella 2007: 134).

Analysis of measurements of animal bones from archaeological sites reveals increases in the size of domesticated animals on some sites from as early as the later 14th century – prefiguring the 'improvements' of the Agricultural Revolution by almost 400 years (Thomas 2005a; Thomas *et al.* 2013). For some species it is clear that this was brought about by the introduction of new types of livestock from outside Britain, a phenomenon acknowledged in early modern husbandry manuals (e.g. Worlidge 1698). By the 16th and 17th century, evidence exists for the selection of particular physical attributes: a good example is provided by archaeological evidence for crested chickens (akin to the contemporary Polish breed), which are characterised by a cerebral hernia (Gál *et al.* 2010).

During the medieval and post-medieval periods a number of important species were introduced to Britain for their economic and social benefit. Examples include rabbits (*Oryctolagus cuniculus*) and fallow deer (*Dama dama*). While both of these were introduced by the Romans, neither successfully established permanent breeding populations; however, they did so following their reintroduction by the Normans in the 12th century (Sykes 2010; Sykes & Curl 2010). Both species were highly-regarded game animals throughout the medieval period and legitimate access was restricted to the elite (Thomas 2007). Some birds were also introduced for their economic benefit during the medieval and early modern periods. Examples include the guinea-fowl (*Numida meleagris*) and the turkey (*Meleagris gallopavo*) which reached Britain by the 16th century (Poole 2010). Like fallow deer and rabbit they were initially only affordable to the elite. However, the establishment of local populations of breeding birds soon hastened their democratisation and widespread consumption (Fothergill 2014).

Exotic animal bones are not abundant in archaeological assemblages of the medieval and early modern periods; however, the fact that they are occasionally recovered adds particular significance to the absence of the tortoise. The bones of primates provide indications of trade with or travel to parts of Europe with abundant tortoise populations. For example, Barbary

apes (*Macaca sylvanus*), common to Algeria and Morocco, were recovered from a context dated c. AD 1300 at Southampton and from medieval/post-medieval deposits in London (Noddle 1975; Pipe 1992). Perhaps even more surprising, an elephant (*Loxodonta elephas*) ulna radiocarbon dated to AD 1290-1410, was excavated from the fill of a cess pit in Chester (Smith 2008: 354). By the early modern period trade routes expanded, as evidenced by the presence of a South American capuchin monkey (*Cebus nigrivittatus*) and the remains of a juvenile terrapin (Emydidae or Bataguridae family) retrieved from 17th-century deposits in London (Armitage 1981; Armitage *et al.* 2005). Given the maritime context of these animals (i.e. the ports of London and Southampton), it seems likely that these were brought back (alive or dead) as curiosities by merchant sailors. While there is a disappointing absence of bones belonging to exotic birds kept for their colourful plumage, two parrot bones were recovered from a pit dated to the mid-late 17th century from the site of Norwich Castle (Albarella *et al.* 2009). Unfortunately, it was not possible to determine the species and thus where these birds originated. Other animals were clearly introduced to populate menageries. For example, a North African Barbary lion (*Panthera leo leo*) and a leopard (*Panthera pardus*), ranging in date from the 13th to the 17th centuries, were excavated from deposits connected to the Royal Menagerie at the Tower of London (O'Regan *et al.* 2006). Other animals were probably introduced as pets for the elite. Partial guinea pig (*Cavia porcellus*) skeletons were recovered from Hill Hall manor, Essex, dated 1574-5, and from a middle-class property in the Belgian town of Mons dated to the end of the 16th century or the beginning of the 17th century (Hamilton-Dyer 2009; Pigière *et al.* 2012). Notably, these discoveries are contemporary with a recently discovered portrait that illustrates three Elizabethan children, with a brown and white guinea pig being held by the central figure (NPG 2013).

Given the presence of other exotic animals in the archaeological record, the question that demands an answer is: why are tortoises missing? One possibility is that their absence reflected prevailing attitudes. In the Old Testament tortoises were described as unclean and often symbolized evil and darkness:

"There also shall be unclean unto you among the creeping things that creep upon the earth: the weasel, and the mouse, and the tortoise after his kind" (Lev. 11: 29).

The early Christian scholar St Jerome (c. AD 342-420) recounted that the tortoise moves sluggishly because it is "burdened and heavy with its own weight . . . signifying the grievous sin of the heretics" (Toynbee 1973: 223). Such attitudes may have been reinforced following the rediscovery of Classical

scholarship during the Renaissance: the 1st-century AD Roman writer Seneca classed the tortoise as a sluggish and loathsome beast; in late Greek the word for tortoise meant dweller in Hell; an early Christian curse tablet is addressed to “the most unclean spirit of a tortoise”; and tortoises were represented in art as the “embodiment of evil in combat” (Toynbee 1974, 222). Given the pervasiveness of Christian doctrine in medieval society (Cohen 1994), it is perhaps no surprise that there was little interest in keeping tortoises. This may be evidence of a long-standing tradition: tortoises are rarely featured in domestic scenes in Greek art (Calder 2011) and there are no documented named pet tortoises in Roman writing (Toynbee 1974, 222).

The first tortoises in Britain

The 17th century seems to mark a watershed in the trade in tortoises across Europe, a consequence of the opening up of new routes and changing attitudes towards animals (Thomas 1983). The first documented pet tortoise in Britain was acquired by Archbishop Laud in London in 1633; the carapace of this can still be viewed at Lambeth Palace. Archbishop Laud was executed in 1644, but the tortoise lived until 1753 when he was accidentally despatched by a gardener during his hibernation (Young 2003: 125): evidenced by the cracked carapace.

Reference to another tortoise imported into Britain in the late 17th century is made in a letter by A.B.C. to Mr. Urban published on January 22nd 1793 in the *Gentleman's Magazine*:

“In Vol. LXII. p. 879, there is an error, I suppose, of the press, in the letter from Mr. Jermy [sic], respecting his tortoise. The name of the place is Bayfield, not Rayfield. This tortoise was brought by Mr. Robert Swallow from Smyrna [on the Aegean coast of Anatolia, modern day Turkey] in 1683, and given by him to Mr. Jermy, of Bayfield, in Norfolk, in July 1686. She yearly, in November, went under ground, where she remained until the latter end of March. In May she made a hole in a gravel walk, and therein usually laid nine eggs. She was found dead in the earth, April 1743. You may depend upon the truth of the account.”

Tortoises were also being moved around Europe to satisfy growing curiosity about the natural world (George 1980). Louis XIV had two tortoises within his menagerie at Versailles in 1671 and dissected tortoises are featured in Claude Perrault's treatise on animal anatomy (Perrault 1688). Tortoises also appear in Edward Topsell's *The History of Four-Footed Beasts* (1607) and the reprinted version *The History of Four-Footed Beasts and Serpents* (1658): effectively, a condensed and translated version of Conrad Gessner's monumental *Historiae Animalium* (1551) (Fig. 1). Archaeological discoveries provide further evidence of scientific interest in tortoises: in the 17th-century garden of a

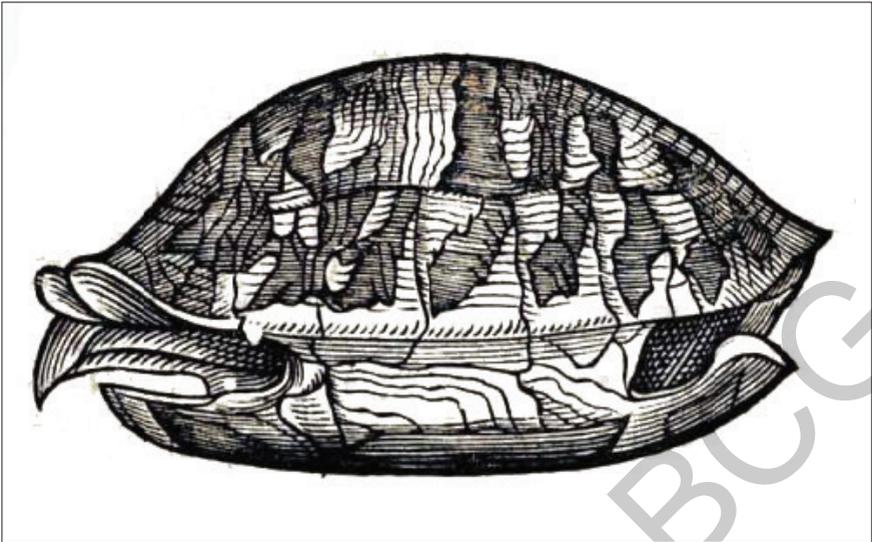


Fig. 1. Tortoise carapace depicted in Edward Topsell's *The History of Four-Footed Beasts and Serpents* (1658). Image Courtesy of Special Collections, University of Houston Digital Library. <http://digital.lib.uh.edu/collection/p15195coll18/item/81>

monastic boarding school in Augsburg, Germany, the appendicular skeleton and carapace of a land tortoise was recovered (Thomas 2010). As the tortoise was found alongside human bones that were drilled through the joints, it seems plausible to suggest that they originated from the school's natural sciences collection.

Slow-moving interest

No who's-who of famous tortoises is complete without mention of Timothy. In 1770 the naturalist Gilbert White (author of a *Natural History of Selbourne*) inherited this Mediterranean tortoise from his aunt (Highfield & Martin 1989; Lee 1999). White's uncle originally purchased Timothy from a sailor in Chichester for 2s 6d around 1740.

The continued rarity of tortoises in this period is exemplified by the fact that in 1810 *The Times* newspaper ran a feature on a tortoise living in the garden of the Bishop of Peterborough that was supposedly over 200 years old (Chambers 2004: 175), although records suggest that it was more likely purchased in the mid-18th century (Lee 1999).

The first archaeological evidence for a tortoise in Britain comes from the site of the Royal London Hospital and provides evidence for continued scientific interest in these animals. The hospital was founded in 1740 and archaeological evidence suggests that an associated burial ground was in use between 1820 and 1854 (Morris *et al.* 2011). Some of the animal bone

from the site is waste from the hospital kitchens, which provides insight into the diet of patients and staff. However, many of the animal bones appear to originate from an anatomy school attached to the hospital. As well as domestic animals (cattle, sheep, horses, dogs, cats and rabbits), some of which showed evidence of dissection and articulation, a number of exotic species were present, including: the skull of a guinea pig; a headless monkey (possibly a mona monkey – *Cercopithecus mona*), originating from west Africa, around Nigeria; a partial skeleton of a tortoise, identified as a Hermann's tortoise (*Testudo hermanni*); and a single tortoise humerus from an unknown non-European species (Morris *et al.* 2011). A smaller, but comparable, assemblage was recovered from an early to mid-19th-century burial ground beneath St. Pancras International, where the carapace of a tortoise was recovered along with the remains of a dissected walrus (*Odobenus rosmarus cf divergens*) (Pipe & Emery 2011).

A commercialised tortoise trade

By the end of the 19th century, the importation of tortoises into Britain had become commercialised as Henry Mayhew accounted in 1861. The scale of this trade is typified by the following advertisement published on the 3rd December 1881 in *The Era* by William Cross, a major importer of wild animals in Liverpool: "A cargo of tortoises has just arrived, and may be had for 25s a 100 wholesale. They sell at 1s each easy. This is while they last." Certainly, the general public must have been sufficiently familiar with tortoises to appreciate the humour of a Punch cartoon published in 1869 with a caption that reads:

"Railway porter (to old lady travelling with a menagerie of pets). 'Station master say, mum, as cats is "dogs", and rabbits is "dogs", and so's parrots; but this ere "turtis" is a insect, so there ain't no charge for it!'"

Archaeological support for the keeping of tortoises as pets is evidenced at Stafford Castle, Staffordshire (Thomas 2010). Here, a tortoise humerus (upper arm bone) was recovered from a levelling layer within the keep's courtyard and dated to c. 1875-1900 (Fig. 2). Although the appendicular bones of tortoises are difficult to tell apart, the shape of this bone closely matches the spur-thighed tortoise (*Testudo graeca*) and derives from an animal that was about 15cm in length. The fact that the tortoise was recovered alongside many cat and dog skeletons suggests that these were pets of the caretakers of the castle, buried within the keep. Another tortoise bone belonging to the *Testudo* genus – this time a femur – was recovered from the nearby Dudley Castle, West Midlands (Fig 3); unfortunately, the specimen was poorly provenanced and can only be dated to after 1750.



Fig. 2. Tortoise humerus from Stafford Castle, Staffordshire.



Fig. 3. Tortoise femur from Dudley Castle, West Midlands.

At the very end of the 19th century, it was clear that tortoises were being translocated for reasons other than companionship. The *Edinburgh Evening News* on Saturday 22nd January 1898 reports (British Newspaper Archive 2013): “Who but a Parisian would conceive the idea of bejewelling miniature live tortoises. ‘All Paris’ is talking about this newest craze.” This ‘craze’ involved precious stones being mounted and clipped onto the carapaces of live tortoises with a gold chain and pin, which permitted the wearing of the live tortoise as a brooch. Doubtless this fashion was short-lived and there is no evidence that it made its way across the Channel; nevertheless, it emphasises further the commodification of tortoises in this period.

The stimulus for the dramatic rise in the tortoise trade in the late 19th century is unclear, although the centrality of Galapagos tortoises in the development of Charles Darwin’s theory of evolution (Darwin 1845), their increased frequency within literature (Young 2003: 132) and the acquisition (and marketing) of giant tortoises within zoological collections (e.g. Illustrated London News 1852: 117) may have heightened their popular appeal. We might also view the expanded trade in tortoises as part of a wider growth of interest in exotic animals facilitated by “the rise of science and the rise of Empire”, and reflected in the proliferation of travelling menageries, circuses, zoological gardens and private menageries (Simons 2012: 8). By the 1870s, London had become the foremost centre in Europe for the trade in exotic animals (Velten 2013: 145) and in 1895 there were 118 animal dealers listed in the Post Office Directories for the city (Simons 2012: 49). The commercialised trade in tortoises may have been fuelled further by changes in attitudes towards animals and in particular companion animals during the 19th century (Ritvo 1994; Thomas 2005b, 2010). Such changes included: adoption of the notion that animals had souls and thus beloved pets could be reunited with the family in the afterlife (testified by the emergence of the pet cemetery (Howell 2002)); the appearance of legislation to prevent animal cruelty (e.g. Martin’s Act 1822); and the advent of societies dedicated to the protection of animals (e.g. the Society for the Prevention of Cruelty to Animals, which later became the Royal Society for the Protection of Cruelty to Animals, was founded in 1824).

By the turn of the 20th century, thousands of land tortoises were shipped each year. In Britain they were so cheap (costing as little as sixpence) that they served as fair-ground prizes (Young 2003: 103). Because there was little understanding of how to look after tortoises, only one or two per cent of those sold in Britain could be expected to survive their first year (Young 2003: 104). By 1964, over two million Mediterranean spur-thighed tortoises were imported into the UK. Twenty years later, following a European Economic Community regulation, the trade in spur-thighed, Hermann’s and marginated tortoises (*Testudo marginata*) was prohibited (EEC Regulation 3636/82; Highfield 1990: 6).

Conclusions

While the bones of tortoises remain rare on archaeological sites in Britain, when interrogated alongside written sources they disclose an interesting story about the longevity, diversity and complexity of our relationships with exotic animals. Initially reviled, tortoises became desired and traded as exotica amongst the wealthy by the later 17th century. They were exploited as objects of scientific curiosity and commoditised as pets by the late 19th and early 20th century. It is deeply tragic that the growing desire by ordinary people in Victorian Britain to keep animals as pets contributed to the translocation of millions of animals and threatened their existence in the wild.

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Bibliography

- A.B.C. (1793). Letter from A.B.C. to Mr. Urban (22 Jan). *The Gentleman's Magazine* 73: 44.
- Albarella, U. (2007). Companions of our travel: the archaeological evidence of animals in exile. In: Hartmann, S. (ed.), *Fauna and Flora in the Middle Ages*. Beihefte zur Mediaevistik 8. Frankfurt am Main, Peter Lang, pp. 133-153.
- Albarella, U. & Pirnie (2008). A review of animal bone evidence from Central England. http://archaeologydataservice.ac.uk/archives/view/animalbone_eh_2007/
- Albarella, U., Beech, M., Locker, A., Moreno-García, M., Mulville, J. & Curl, J. (2009). *Norwich Castle: Excavations and Historical Surveys 1987-98. Part III: a Zooarchaeological Study*. Norwich, East Anglian Archaeology Occasional Paper.
- Armitage, P. (1981). Jawbone of a South American monkey from Brooks Wharf, City of London. *London Archaeologist* 4(10): 262-270.
- Armitage, P., Arnold, N. & Meddens, F. (2005). Note on the reptile remains, pp. 81-82 in: Killock, D. & Meddens, F. (eds), *Pottery as plunder: a 17th-century maritime site in Limehouse, London*. *Post-Medieval Archaeology* 39(1): 1-91.
- British Newspaper Archive (2013). Tortoise Bling! The Wearing of Live, Jewelled Tortoises in Paris in 1898. <http://blog.britishnewspaperarchive.co.uk/2013/08/22/tortoise-bling>.
- Calder, L. (2011). *Cruelty and Sentimentality: Greek Attitudes to Animals 600-300 BC*. Oxford, British Archaeological Reports International Series 2225.
- Chambers, P. (2004). *A Sheltered Life: the Unexpected History of the Giant Tortoise*. Oxford, Oxford University Press, p. 175.

- Cohen, E. (1994). Animals in medieval perceptions: the image of the ubiquitous other. In: Manning, A. & Serpell, J. (eds). *Animals & Human Society: Changing Perceptions*. London and New York, Routledge, pp. 59-80.
- Coryat, T. (1611). *Coryat's Crudities. Hastily gobled up in five Moneths travells in France, Savoy, Italy, Rhetia commonly called the Orisons country, Helvetia alias Switzerland, some parts of high Germany and the Netherlands ; Newly digested in the hungry aire of Odcombe in the County of Somerset, and now dispersed to the nourishment of the travelling members of this kingdome*. Glasgow, Robert Maclehose & Company Ltd., p. 395.
- Darwin, C. (1845). *Journal of Researches into the Natural History and Geology of the Countries Visited During the Voyage of H.M.S. Beagle Round the World, Under the Command of Capt. Fitz Roy, R.N.* (Second edition). London, John Murray.
- Fothergill, B.T. (2014). The husbandry, perception and "improvement" of the turkey in Britain, 1500-1900. *Post-Medieval Archaeology* 48(1): 210-231.
- Gál, E., Csippán, P., Daróczi-Szabó, L., & Daróczi-Szabó, M. (2010). Evidence of the crested form of domestic hen (*Gallus gallus f. domestica*) from three post-medieval sites in Hungary. *Journal of Archaeological Science* 37(5): 1065-1072.
- George, W. (1980). Sources and background to discoveries of new animals in the sixteenth and seventeenth centuries. *History of Science* 18: 79-103.
- Hamilton-Dyer, S. (2009). Animal Bones. In: Dury, P. & Simpson, R. (eds), *Hill Hall: a Singular House Devised by a Tudor Intellectual*. London, Society of Antiquaries and English Heritage Monograph, pp. 345-351.
- Highfield, A.C. (1990). Tortoises of North Africa: taxonomy, nomenclature, phylogeny and evolution with notes on field studies in Tunisia. *Journal of Chelonian Herpetology* 1: 1-56.
- Highfield, A.C. & Martin, J. (1989). New light on an old tortoise – Gilbert White's Selbourne tortoise rediscovered. *Journal of Chelonian Herpetology* 1: 13-22.
- Howell, P. (2002). A place for the animal dead: pets, pet cemeteries and animal ethics in late Victorian Britain. *Ethics, Place & Environment: A Journal of Philosophy & Geography* 5(1): 5-22.
- Illustrated London News (1852). Immense tortoise. *Illustrated London News* [London, England] 14 Aug. 1852: 117.
- Lee, D. S. (1999). Timothy – a famous and not to be forgotten tortoise. *Bulletin of the Chicago Herpetological Society* 34(10): 255-277.
- Mayhew, H. (1861). *London Labour and the London Poor. A Cyclopaedia of the Condition and Earnings of Those That Will Work, Those That Cannot Work, and Those That Will Not Work Volume 2*. London, Frank Cass & Co. Ltd., p. 80.
- Morris, J., Fowler, L. & Powers, N. (2011). A hospital with connections: 19th-century exotic animal remains at the Royal London Hospital. *Post-Medieval Archaeology* 45(2): 367-373.

- Noddle, B. (1975). The animal bones. In: Platt, C. & Coleman-Smith, R. (eds), *Excavations in Medieval Southampton 1953-1969*, 1. *The Excavation Reports*, Leicester, Leicester University Press, pp. 332-339.
- NPG (2013). Earliest portrait of a guinea pig discovered as exhibition reveals unseen painting. <http://www.npg.org.uk/about/press/news-release-earliest-portrait-of-a-guinea-pig.php> (last accessed 13/05/14).
- O'Regan, H., Turner, A. & Sabin, R. (2006). Medieval big cat remains from the royal menagerie at the Tower of London. *International Journal of Osteoarcheology* 16: 385-94.
- Perrault, C. (1688). *Memoirs for a Natural History of Animals: Containing the Anatomical Descriptions of Several Creatures Dissected by the Royal Academy of Sciences at Paris*. London: Joseph Streater, pp. 250-267.
- 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: 1020-1024.
- Pipe, A. (1992). A note on exotic animals from medieval and post-medieval London. *Anthropozoologica* 16: 189-191.
- Pipe, A. & Emery, P. A. (2011). Faunal remains. In: Emery, P. A. & Wooldridge, K. (eds), *St Pancras Burial Ground: Excavations for St Pancras International, the London Terminus of High Speed 1, 2002-3*. Oxford, Gifford Monograph, p. 157.
- Poole, K. (2010). Bird introductions. In: O'Connor, T. & Sykes, N. (eds), *Extinctions and Invasions: a Social History of British Fauna*. Oxford, Windgather Press, pp. 156-165.
- Ritvo, H. (1994). Animals in nineteenth century Britain: complicated attitudes and competing categories. In: Manning, A. & Serpell, J. (eds), *Animals & Human Society: Changing Perceptions*. London and New York, Routledge, pp. 20-127.
- Simons, J. (2012). *The Tiger that Swallowed the Boy: Exotic Animals in Victorian England*. Faringdon, Libri Publishing, pp. 8, 49.
- 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*. Archaeological Service Excavation and Survey Report No. 14. Chester, Chester City Council, pp. 332-380.
- Sykes, N. (2010). European fallow deer. In: O'Connor, T. & Sykes, N. (eds), *Extinctions and Invasions: a Social History of British Fauna*. Oxford, Windgather Press, pp. 51-58.
- Sykes, N. & Curl, J. (2010). The rabbit. In: O'Connor, T. & Sykes, N. (eds), *Extinctions and Invasions: a Social History of British Fauna*. Oxford, Windgather Press, pp. 116-126.
- Thomas, K. (1983). *Man and the Natural World 1500-1800: Changing Attitudes in England 1500-1800*. London, Penguin Books.
- Thomas, R. (2005a). Zooarchaeology, improvement and the British Agricultural Revolution. *International Journal of Historical Archaeology* 9(2): 71-88.

- Thomas, R. (2005b). Perceptions versus reality: changing attitudes towards pets in medieval and post-medieval England. In: Pluskowski, A. (ed.), *Just Skin and Bones? New Perspectives on Human-Animal Relations in the Historic Past*. Oxford, British Archaeological Reports International Series 1410, pp. 95-105.
- Thomas, R. (2007). Chasing the ideal? Ritualism, pragmatism and the later medieval hunt. In: Pluskowski, A. (ed.), *Breaking and Shaping Beastly Bodies: Animals as Material Culture in the Middle Ages*. Oxford, Oxbow, pp. 125-148.
- Thomas, R. (2010). Translocated testudinidae: the earliest archaeological evidence for tortoises in Britain. *Post-Medieval Archaeology* 44(1): 165-171.
- Thomas, R., Holmes, M. & Morris, J. (2013). "So bigge as bigge may be": tracking size and shape change in domestic livestock in London (AD 1220-1900). *Journal of Archaeological Science* 40(8): 3309-3325.
- Toynbee, J. M. C. (1973). *Animals in Roman Life & Art*. London, Thames & Hudson, pp. 222, 223.
- Velten, H. (2013). *Beastly London: a History of Animals in the City*. London, Reaktion Books.
- Walker-Meikle, K. (2012). *Medieval Pets*. Woodbridge, The Boydell Press.
- Worlidge, J. (1698). *Systema Agriculturae; the Mystery of Husbandry Discovered*. London, J. W. Gent.
- Young, P. (2003). *Tortoise*. London, Reaktion Books, pp. 103, 104, 105, 125, 132.

