"*Let Nature Be Your Teacher*": Regional Natural History Collecting in Seventeenth, Eighteenth, and Nineteenth Century Britain

This line from William Wordsworth describes the interest shared by natural history collectors throughout Britain's early modern period. The objects collected by these gentlemen scientists formed the first exhibits in what were to become the world's most famous museums, from the Ashmolean to the British Museum itself. While the exoticism of new species discovered abroad captured the fascination of many amateur naturalists, Britannia herself caught the eye of numerous intrepid collectors and natural philosophers. This attraction to local flora and fauna coexisted during periods of great advancements in the discovery of species diversity in the far reaches of the empire. This project explores the factors that contributed to intense, locally focused natural history interest and collecting produced by amateur scientists of the 17th, 18th, 19th century England. In particular, my research focuses on three issues: changes in collection and display organization over the three centuries, how the contributions of these local collectors contributed to larger British museum institutions, and how the approach taken by certain naturalists produced works that featured an emphasis on specifically local flora and fauna. Science does not necessarily come without an agenda. I will argue that a selection of British naturalists used the larger social and scientific paradigms of these three periods as ways of producing local natural histories.

Many of the earliest British natural history museums and institutions amassed their collections via donations and bequests from individuals. These individuals who contributed to

the everyday "normal science", as described by Thomas Kuhn, form the basis of my exploration.[1] I have selected three people, one from each century, to use as case studies to chart the changes in approaches to natural history over the period. These three men, Robert Plot (1640-1696), Thomas Pennant (1716-1798), and the Reverend Leonard Jenyns (1800-1893), held different interests, from insects to fossils, and collected in different manners—yet they shared a distinct fascination with local flora and fauna (and history). While the majority of their collections are of a natural history variety, each also took an interest in antiquarianism; both topics fell into the realm of natural philosophy and various societies focused on the subject discussed each in turn. Their works, *The Natural History of Oxford-shire: Being an Essay Towards the Natural of England* (1677), *British Zoology* (1776), and *Fauna Cantabrigiensis: the vertebrate and molluscan fauna of Cambridgeshire* (1869), are emblematic of their particular periods. These naturalists contributed to the production and compilation of the facts and theories that fit the scientific paradigm of their age.

Although Plot, Pennant, and Jenyns occupied different periods in British history, each man experienced life under the British empire. Plot, living in the seventeenth century, marked by expansion of British interests into North America, the West Indies, Africa, and India, worked in a period in which science was experiencing a revolution. The prevailing scientific 'method' of this time came from work of Sir Francis Bacon. 'Baconianism' centered on a method of assembling, systematically, massive amounts of information on a subject (usually science) and using inductive logic to draw conclusions. Many who subscribed to Bacon's ideas strove to use

[1] Thomas Kuhn, *The Structure of Scientific Revolutions*, 5. Kuhn uses this definition of "normal science' in comparison with the science he believes ultimately causes a shift in thinking (here he coins the term paradigm shift). After the accumulation of enough of this "normal science", Kuhn believes that one revolutionary thinker uses the evidence to alter the established set of ideas generally held by the scientific community as correct. This is how he posits that scientific revolutions take place—not a gradual accumulation of truth, but the use of that evidence to prove that the status quo no longer works, creating a need for a new paradigm.

their cabinets of curiosity not just for amusement, but also for the advancement of science. At the same time, trade between Britain and her territorial interests remained on a mainly chartered basis, providing opportunities for independent fortune seekers—adventurers and intellectuals alike to gain greater access to what the natural world had to offer. Increased contact with other cultures also allowed greater access for collectors to get their hands on rare specimens.

These economic relationships transformed during the eighteenth century as formal territory claims emerged (and were lost, as were the American colonies). Lands a world away, such as Guyana or Australia, became British territory, the same and yet very different from the back gardens of Oxfordshire. The Enlightenment, with its emphasis on science and learning, produced a boom in amateur science. Broader literacy and cheap printing allowed many to publish their findings, from the most prestigious of philosophical societies to the druggist with a pamphlet on the next wonder salve.[2] This surge of scientific interest was popular among socially elite circles, a phenomenon that demonstrated the field's emergence from a few eccentrics in universities into the realm of popular culture.

Finally, the nineteenth century, for my research purposes, is defined most significantly by industrialization and Romanticism. The explosion of technology and industrial advancements changed the way everyday people experienced the world; farmers moved off the land to work in factories and numerous new cities were incorporated. In response to this wave of modernity, many writers and artists, the Romantics, yearned for a closer connection to nature—a pastoral nostalgia. This desire to reconnect with nature drove many wealthy gentlemen into the arms of natural history. The incorporation of new cities, mostly in the midlands and the north, due to

[2] Deborah Harkness, *The Jewel House: Elizabethan London and the Scientific Revolution,* 57.

industrial growth also inspired locals to establish a historical and natural past: a manifestation of civic pride.[3]

Plot, Pennant, and Jenyns occupied periods of history in which the British Empire experienced rapid expansion, yet they chose to focus their efforts in their own back gardens. Their connection to their homeland was not only a product of their own personal interests, but also a desire to further connections to the land in the eras of imperial expansion and industrialization. Local collectors contributed greatly to the cabinets of curiosities owned by individuals and large museum collections, and their reasons for retaining a local focus are often overlooked amid the exotic finds from the rest of the Empire.[4] The motivations behind local and imperial collectors differed and coexisted, as some looked outside the confines of the empire and others extolled the value of what could be found at home. The wild and mysterious collections of adventure seekers abroad receive the most attention, and the purpose of this research is to shed light on the contributions of local enthusiasts so that we can better understand how regional natural histories continued to thrive amongst the alluring exotica of the empire.

[3] Samuel J.M.M. Alberti, "Placing Nature: Natural History Collections and their Owners in Nineteenth-Century Provincial England", 298-300.

[4] Some works that emphasize the international focus of British natural history collectors are as follows: Richard H. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860*, Jonathan Evan Maslow, *Footsteps in the Jungle: Adventures in the Scientific Exploration of the American Tropics*, Rob Iliffe "Science and Voyages of Discovery" in *The Cambridge History of Science Volume 4: Eighteenth-Century Science.*

A Word on Museums

The history of museums is a subject all its own and has a rich scholarship on which I draw for this paper.[5] The origins of museums are often traced back to the courts of Renaissance princes and their evolution into cabinets of curiosity, which appear in Britain much later.[6]

The British Museum was founded in 1753 due to the patronage of Sir Hans Sloane and an act of Parliament (The British Museum Act of 1753).[7] Even before this monumental museum gained official status, individual collections were housed in local philosophical societies, which often rented building space for this purpose. Robert Plot was a member of the Royal Society of London, Pennant was elected to the Society of Antiquaries, and Jenyns was a member of the Cambridge Philosophical Society and the Bath Natural History and Antiquarian Field Club. These societies provided important connections for collectors—colleagues to share ideas with, the names of good specimen dealers, and even the best techniques for taxidermy.

The long history of museums intertwines with cultural values of civility, refinement, and education; of uplifting entertainment. There existed, of course, museums in name that displayed the fantastical or even false, in a Ripley's Museum fashion.[8] To observers in the twentieth century, and to some extent the twenty-first, museums represented the culmination of human progress. The twentieth century writer Henry C. Shelley even remarked, "Museums, in fact, are

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[5] Silvio A. Bedini, "The Evolution of Science Museums", Hugh H. Genoways and Mary Anne Andrei, *Museum Origins: Readings in Early Museum History and Philosphy*, Edward P. Alexander and Mary Alexander, *Museums in Motion: An Introduction to the History and Functions of Museums*.
[6] Silvio A. Bedini, "The Evolution of Science Museums", 1.
[7] Great Britain. *Acts and Votes of Parliament Relating to the British Museum*, 7-13.
[8] Ripley's Museum, referring to the now global franchise started in the early twentieth century by Robert Ripley, is provided as a popular culture example of how 'museum' was used as mask for comparatively 'lowbrow' entertainment. Most visitors to Ripley's today are under no illusions that the exhibits they are seeing are indeed intended to be

possible only when a nation has reached a high state of civilization", placing a cumulative value on the state of society.[9]

Why Does Order Matter?

Order and organization can reveal what these collectors deemed important, what they believed was connected, and shed light on their view of how the world worked. The manner in which Plot, Pennant, and Jenyns, along with their contemporaries, organized their works both reflects the scientific paradigms they occupied, as well as the cultural atmosphere in which they lived. The idea of a natural order, or correct way in which to categorize the world and its inhabitants is, as described by Foucault, artificially constructed to fulfill the needs of that culture.[10] How a naturalist organized his text or curated his collection can illuminate what particular ideals they sought to fulfill.

More broadly, epistemology traces how modes of thought and logic have evolved since the great Classical thinkers of Socrates, Plato, and Aristotle. Their ideas of logical process held sway for centuries after their time until their eventual reshaping by such individuals as Galileo. To be fair, this is not a paper with a mission to trace the evolution of Aristotelian modes of thinking. Rather, I hope that by prefacing the history in which the task of classification sits, that light will be shed on the weightiness of the topic.

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[9] Henry C. Shelley, *The British Museum: its history and treasures; a view of the origins of that great institution, sketches of its early benefactors and principal officers, and a survey of the priceless objects preserved within its walls*, 7.
[10] Michel Foucault, *The Order of Things,* xv-xxiv.

The scientific fields are a natural area in which the application of ordering systems can be explored, simply due to the wide range of things that may be considered 'sciences' or even 'scientific'. Today, scientific faculties rarely encounter each other, with the biology department hardly giving the physics department the time of day. For Plot, Pennant, and Jenyns, however, the discipline of science, though not necessarily referred to in that way, encompassed disciplines ranging from astronomy, chemistry, geology and physics to zoology and botany.[11] Even after Copernicus and the subsequent Scientific Revolution of the sixteenth century, "science" as we know it today was broad and vague.

"If England and Wales were thus surveyed, [would it] not be both for the honor and profit of the Nation?"

The question above concluded Robert Plot's dedication to King Charles II in his *Natural History of Oxfordshire, Being an Essay towards the Natural History of England*, placing all hopes of future projects for Plot in the hands of his king.[12] Plot had planned to expand his survey of the countryside beyond the borders of Oxfordshire, and as his title states in an aspirational manner, the rest of the country. He did not complete a survey of the entirety of England, but instead published a similar work on Staffordshire before taking the position of the first keeper of the Ahsmolean Museum, founded in 1683. Plot's career flourished after the publication of *The Natural History of Oxfordshire*, with election to the Royal Society and the creation of a special

[11] Deborah Harkness, *The Jewel House: Elizabethan London and the Scientific Revolution*, xvi-xix

[12] Robert Plot, *The Natural History of Oxfordshire, Being an Essay toward the Natural History of England*, b1. Plot dedicates this work to King Charles II in a manner that seems as if the king had commissioned it, not as an independent work of scholarship that it was. His dedication also plays upon the role of royal patrons and the works produced by famous Classical natural historians such as Aristotle and Pliny.

lectureship for him at Oxford soon following.[13] Robert Plot's place in the chronology of British natural history is of upmost importance, complete with the honor of being the first to depict what we now know to be a dinosaur fossil.[14]

Plot's education at Oxford's Magdalen Hall provided ample inspiration for the naturalist. It was during his time at university that Plot most likely encountered Pliny the Elder's *Historia naturalis*, a formative text for aspiring naturalists. Robert Plot even notes Pliny's dedication to his patron, Vespasian, and follows the Plinian method of organization in his *Natural History of Oxfordshire*. This method categorized all things in nature into two sections, things relating to the heavens and those relating to the earth. Plot follows this structure quite closely, with his first chapter titled, *On The Heavens and Air*, followed subsequently by *Of The Waters* and *Of the Earths*.[15] Later chapters concern plants and animals, in due course, and yet these sections are divided into a hierarchal structure as well. His chapter concerning flora is simply titled, *Of Plants*, a great contrast to Plot's chapter title for his section on fauna; *Of Brutes*.[16] Animals are clearly placed on a lower level than are plants, as if flora possess some tacit civility not found in the beasts of the land or sea.

The second main contributing factor in Plot's formulation of *The Natural History of Oxfordshire* was the work and influence of Sir Francis Bacon. While it has long been argued

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[13] The specific dates of Plot's various scholarly achievements can be found under his name in the Oxford Dictionary of National Biography, http://www.oxforddnb.com/view/article/22385. His accomplishments within the Ashmolean, 0Oxford University, and the Royal Society all reflect the title often accompanying his works, the 'learned Dr. Plot'. The 'Dr.' in this case is not a misnomer, as Plot matriculated an MA from Oxford in 1664 (the PhD system had not arrived from Germany at this point).

[14] Plot is often credited for publishing the first sketch of a fossilized Megalosaurus femur, although he believed that the anatomical shape was a purely coincidental formation of crystalized mineral salts. http://www.oum.ox.ac.uk/learning/pdfs/plot.pdf.

[15] Robert Plot, *The Natural History of Oxfordshire*, 1, 18, 51.

[16] Robert Plot, *The Natural History of Oxfordshire*, 143, 175.

whether or not Bacon made any real contributions to the field of science, his influence on the philosophy of science cannot be overlooked. It is true that he did little in the way of actual experiments, but the way he advocated the approach to conducting scientific exploration has had lasting implications for the way in which modern science operates.[17] Robert Plot incorporated Bacon's ideas of empiricism and the importance of what one might call 'data mining'—collecting as much information as possible in the hopes of a great truth revealing itself. Plot included his own experiments within *The Natural History of Oxfordshire*, most notably his exploration of the echo phenomenon. By shouting, quite literally, at different surfaces in different environments, Plot records the resulting effects on the sound of his echo and interprets the nature of echoes.[18] The systematic experiment procedure that Plot follows in his exploration of echoes mirrors Bacon's ideas on testing nature, or putting it on trial. The only stakes being the advancement of human understanding. Fearing the misunderstanding of knowledge caused Bacon to search for a method with which to provide "some direction and ordering in experimenting."[19] Robert Plot marks the crossover between the 'new' way of approaching science—Baconianism—and the remaining influence of the ancients—Pliny.

Although the majority of Plot's life and work came after the English Civil War, the conflict undoubtedly affected how he and other naturalists who relied on wealthy, aristocratic patrons conducted their research. It is clear from his dedication of *The Natural History of*

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[17] Peter Pesic, "Wrestling with Proteus: Francis Bacon and the 'Torture' of Nature." *ISIS*, 81.

[18] Robert Plot, *The Natural History of Oxfordshire*, 7-17. Plot actually devised an intricate system for measuring the types of echoes that returned to him, categorizing them as either single, polysyllabical, or manifold, depending on how many echoes he could hear. He also deduced the importance of several factors that affected the nature of the echo: the "true place of the speaker", the "vocal line", and the angles at which objects might be 'hit' by the projection of his voice. Interestingly, Plot shouted the same line at all of his surfaces; "Quo nec reticere loquenti, Nec prior ipsa loqui didicit resonabilis Echo", which translates to "That they were not to remain silent, that was speaking, has to be learned, to not be the first to speak in the very resounding Echo". (7).

[19] Sir Francis Bacon, *De augmentis scientiarum* 4.413 from Peter Pesic, "Wrestling with Proteus: Francis Bacon and the 'Torture' of Nature." *ISIS*, 83.

Oxfordshire that Plot's allegiances laid with the monarchy, also evident from his dedication of a later work to King James II.[20] This political stance does not seem to have hindered his ability to collect specimens, write, and curate the Ashmolean Museum. Certainly, those who came in the years before Plot may have encountered difficulty in obtaining specimens with war marching across the country, not to mention the status of their political alliances. At this point in the seventeenth century, the texts that these naturalists produced were intended for the audience of other naturalists within the realm of the Republic of Letters. The outbreak and reconciliation of war may have strained these relationships and the ease with which the members could contact each other.

Plot's approach to surveying the natural world, while not wholly innovative, signaled the growing importance of locality. His interest in surveying the country little by little, as evidenced by his work on Oxfordshire and Staffordshire, contributed greatly to how Plot envisioned the collecting and analyzing process. His emphasis was geographic, weaving key factual explorations and descriptions of the landscapes, plants, and animals that he surveyed into a narrative of place, with surprisingly patriotic results. These natural histories, for Plot, fit well with what historian Ken Arnold calls a "chorographic literature"—literature with an underlying geographic theme or narrative.[21] For Plot, the use of descriptions, drawings, maps, and first-hand experience were all essential for fully ascertaining the "curiosities in nature's cabinet." [22]

The contributions Robert Plot made to the museum world cannot be overlooked. As the first keeper of the Ashmolean Museum, he held an incredibly important position and influenced

[20] Robert Plot, *The Natural History of Staffordshire*, i.
[21] Ken Arnold, *Cabinets for the Curious*, 46.
[22] Ken Arnold, *Cabinets for the Curious*, 48.

the direction in which many subsequent museums followed. It was also his work in Oxford especially that influenced the decision to appoint him keeper. The museum would be erected in Oxfordshire, and its namesake and benefactor, Elias Ashmole, seemed to have full confidence in Plot's ability to run the show—even giving him the responsibility for relocating Ahsmole's personal London collection.[23] Once the collections of Mr. Ashmole and other contributing benefactors were assembled in Oxford, and the construction of the building complete, Plot set about arranging the various objects and specimens in "some 'just' order…fixed in their distinct Cabinets and places."[24] His role with the museum continued after its October 26th, 1683 opening as well. Plot was heavily involved in deciding what type of mission the institution would pursue and steered the Ashmolean towards a research center.

Coupled with the day-to-day tasks of a curator, Plot had his hand in most if not all of the museum's decisions, on top of which he was also named director of the Oxford Philosophical Society. The intimate relationship between the Ashmolean Museum and the Oxford Philosophical Society was forged at the hands of Plot, who, as head of both organizations, steered each towards a distinct goal of philosophical history.[25] This trajectory towards a geographic exploration of Bacon's "objective phenomena" proved successful for both organizations, as the public were eager to see the more unusual aspects of nature and their discussion amongst the OPS prompted serval published works from various embers. This emphasis or bias towards the novelty of the earth was fully embraced by Plot, as he makes clear

[23] Ken Arnold, *Cabinets for the Curious*, 50.
[24] *Ibid*.
[25] *Ibid,* 53. Historian Humphrey Prideaux describes Plot's particular philosophical history as one of topographical enquiries and encompassing a breadth of the natural world, that, to the pigeonholed disciplines of today, might seem overly broad or even vague.

on the opening page of *The Natural History of Oxfordshire* where he describes the contents of his book:

> Natural Things, such as either she hath retained the same from the beginning, or freely produces in her ordinary course; as *Animals*, *Plants*, and the *universal furniture of the world*. Secondly, here *extravagancies* and *defects*, occasioned either by the exuberancy of matter, or obstinacy of impediments, as in *Monsters*. And then lastly, as she is restrained, forced, fashioned or determined, by Artificial Operations.[26]

Plot fully embraced the quirks of nature and found the beauty and scientific value in them. This is not to say that he fashioned the Ahsmolean into a fun house where the public came to peer at the oddities of the earth, rather, he created a space in which to celebrate the myriad forms of the natural world.

The life and work of Plot are intimately related to the course of British natural history in his contributions to the formation of the Ashmolean Museum, for his experimental methods of data collection, and for his work on the geography based surveys of the country. He also demonstrates the persistence of old ideas, such as those surrounding the order of nature as formulated by Pliny the Elder, and how these ideas fit within the new framework of empiricism set out by Sir Francis Bacon. *The Natural History of Oxfordshire*, its organization and content, speaks to the tradition of conducing natural history in a geographic narrative with the intention of completing the story of the country as a whole.

"What knowledge can be more useful than of those objects with which we are most intimately connected?"

[26] Robert Plot, *The Natural History of Oxfordshire*, 1.

That was the question the eighteenth century naturalist Thomas Pennant posed to his readers in his 1776 work, *British Zoology*. Pennant's career in natural history, greatly facilitated by correspondences with other British scholars as well as Carl Linnaeus, flourished throughout Great Britain and even America. Hailing from a well-situated and landed Welsh family, Pennant received a traditional grammar school education as well as a secondary education at Fulham under the tutelage of Thomas Croft, and, although he never received a formal degree, studied briefly at Queens College and Oriel College. Pennant spent much of his childhood in ill health, and so to strengthen his temperament—it is believed that he suffered from depression for much of his life—a young Thomas lived at the homes of his uncle Reverend John Pennant and James Mytton. Pennant's interest in natural history stemmed from an encounter with Willoughby's *Ornithology* (1678) around the age of twelve, and only increased after several tours of the surrounding countryside and Cornwall.[27]

The work for which Pennant is best known is undeniably *British Zoology*, although he published other authoritative volumes such as *Arctic Zoology* (1787) and *A History of Quadrupeds* (1781). Pennant's career arrived on the coat tails of a large shift in Welsh culture from primarily oral to print with the arrival of the printing press in 1718. A flood of publications, both in Welsh and English provided endless hosts for the ideas of intellectuals, theorists, and naturalists.[28] Though Pennant travelled a great deal across England and Scotland, he also journeyed through continental Europe, travels that provided him a decidedly cosmopolitan view

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[27]The quote titling this section comes from the preface of Thomas Pennant's *British* Zoology (1776), a3. For more information on the specific persons of correspondence and dates of Pennant's tours of Scotland and America, refer to the Oxford Dictionary of National Biography under Thomas Pennant's name: http://www.oxforddnb.com/view/article/21860. Most notably, during a tour of continental Europe, Pennant was introduced to the comte de Buffon as well as Voltaire. It is important to note that Pennant's Welsh origins did not present any complications for his election to prestigious societies such as the Royal Society and the Society of Antiquaries as it did for many American naturalists of this time.

[28] Iain McCalman and Clara Tuite, *An Oxford Companion to the Romantic Age: British Culture, 1776-1832*, 302.

of the natural world. It is precisely the fact that Pennant travelled extensively that makes his remarks in *British Zoology* so poignant:

> mankind can rest contented with the ignorance of their native soil, while a passion for novelty attracts them to a superficial examination of the wonders of *Mexico* or *Japan*; but these should be told, that such a passion is a sure criterion of a weak judgment: utility, truth and certainty, should alone be the point at which science should aim; and what knowledge can be more useful than of those objects with which we are most intimately connected? [29]

His worldly experience crafted a perspective that recognized the importance of local knowledge. Pennants opinion, interestingly, clashes with that of his close correspondence Carl Linnaeus, who stated almost the exact opposite sentiment, "He who views only the produce of his own country may be said to inhabit a single world; while those who see and consider the productions of other climes bring many worlds in review before them."[30]

Pennant and Linnaeus, though their opinions may have differed on the importance of investigative scope, corresponded to each other quite frequently and exchanged a total of forty-three letters over the course of twenty years. In one letter in particular, Pennant promises to send a copy of his recently published *A Tour in Scotland and a voyage to the Hebrides; 1772*.[31] This the last letter in the Linnaean Correspondence collection of manuscripts compiled by the Linnaean Society of London so it is impossible to know what the Swedish botanist may have thought about Pennant's latest book. From earlier correspondences, however, it is clear that the two exchanged ideas and specimens freely and regularly, carrying on the tradition of the Republic of Letters. One thing that is for certain, however, is that Pennant wholly adopted

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[29] Thomas Pennant, *British Zoology*, Vol 1., a3.

[30] Carl Linnaeus, *Musaeum Adolphi Friderici Regis* (Stockholm, 1754); the Preface was translated by James Edward Smith as *Reflections on the Study of Nature* (London, 1758) and reprinted in his *Tracts* (London 1798). VIA: Silvio A. Bedini, "The Evolution of Science Museums", 1.

[31] Thomas Pennant to Carl Linnaeus, 29 May 1774 n.s., a. (LS, XI, 458-459).

Linnaeus' taxonomic classification system in his *British Zoology*, published just two years after the last letter in the series of correspondences.

Linnaeus' system of taxonomic classification based, unsurprisingly, on a hierarchical order, provided an easy roadmap to classification. For the first time, a system had been devised with strict rules that could be applied universally—across flora and fauna. This scheme attempted to standardize the naming and grouping of animals and plants, producing the binomial Latin names with which we are all familiar. In his 1735 *Regnum Animale,* Linnaeus provides a chart for animal classification based on six classes: quadrupedia, aves, amphibia, piasces, insecta, and vermes.[32] By providing distinct categories with criteria, Linnaeus allowed other naturalists and aspiring naturalists a succinct pathway of organization, whether it was a serious museum collection or a private assemblage of pinned butterflies.

Pennant fully utilized the Linnaean classification system in *British Zoology*. The first volume was wholly devoted to and titled, "Quadrupeds". The categories do not stop there. He further divides "Quadrupeds" into "hoofed, digitated, pinnated, and winged" with yet another division between "whole and cloven hoofed" animals.[33] Within each section Pennant lists animals of note from each class along with their genus, name in other European languages, and a brief summary of physical attributes and characteristics. Some of the descriptions are quite romantic, like that of the sheep;

> The sheep as to its nature, is a most innocent mild and simple animal; and conscious of its own defenseless fate, remarkably timid: if attacked when attended by its lamb, it will make some shew of defense, by stamping with its feet, and pushing with its head: it is a

[32] Willfrid Blunt, *Linnaeus: The Compleat Naturalist*, 54. The tenth edition (1785) would replace *quadrupedia* with the class *mammalia*. For an interesting look at why the change to *mammalia* took place, see Londa Schiebinger's article titled, "Why Mammals are Called Mammals: Gender Politics in Eighteenth-Century Natural History".
[33] Thomas Pennant, *British Zoology*, Vol 1., d.

> gregarious animal, is fond of any jingling noise, for which reason the leader of the flock has in many places a bell hung round its neck, which the others constantly follow…[34]

Pennant's survey of the fauna of Britain, compared to one that might be conducted today, is broad and fairly general. His grouping of animals based on their external characteristics works well with animals that look quite different—a pig compared to a cow, for instance—but when it comes to minute differences, like those seen in insects, Pennant admits his own ignorance. In the fourth volume of *British Zoology*, dedicated to *crustacea* and *vermes*, he relates to the reader in his preface the limited knowledge he possess on the subject of insects and outright states that he omits them for a lack of scientific understanding.[35]

Pennant's exploration of the British countryside and the animals that live there demonstrates the international character of conducting science on a local scale. His relationship with the work of Carl Linnaeus and the research he conducted in the Hebrides and America all contributed to his dedication to the improvement of British science. By incorporating the knowledge of other countries and thinkers, Pennant extolled the virtues of understanding one's home country before looking beyond the borders.

[34] Thomas Pennant, *British Zoology*, Vol 1., 34.
[35] Thomas Pennant, *British Zoology*, Vol 4., a.

Fauana Cantabrigiensis

Reverend Leonard Jenyns, later Blomefield, took his place in the long line of parson-naturalists that worked and lived in Britain, within the tradition started by Reverend John Ray.[36] His long life was devoted to the church and to nature, with his attentions quite equally divided between the two pursuits. Born to a life of privilege and inheritance, Jenyns attended Eton and Cambridge with a predilection towards chemistry and bookishness.[37] Upon graduation, he worked on various natural history projects with John Stevens Henslow, a fellow botanist and clergyman, who may have influenced Jenyns to follow a career within the Anglican Church. Once ordained in 1823, Jenyns took up residence at Swaffham Bulbeck in Cambridgeshire before the health of his wife caused him to settle finally in Bath.[38]

Wherever Jenyns travelled, he took in the nature around him and labored to further his study in natural history, regularly contributing articles to the prominent *London's Magazine of Natural History* and *The Annals and Magazine of Natural History*. Most notably, in an 1831 diary entry, Jenyns notes an offer that was extended to him for an appointment to accompany Captain Fitzroy as the naturalist on the Beagle voyage to South America, an offer he would

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[36] Steven Shapin, "The Image of the Man in Science." In *The Cambridge History of Science Volume 4: Eighteenth-Century Science*, 159.

[37] Thomas Seccombe, "Blomefield [Jenyns], Leonard (1800-1893)", rev. Roger F. Vaughan, in *Oxford Dictionary of National Biography*, http://www.oxforddnb.com/view/article/2664. A somewhat less concise biography of Rev. Jenyns may be found between pages 5 and 15 in the book, Leonard Jenyns and R.C. Preece, *Fauna Cantabrigiensis: The Vertebrate and Molluscan Fauna of Cambridgeshrie by the Rev. Leonard Jenyns (1800-1893): Transcript and Commentaries*, where the minutia of his life and dates are listed and extolled. To clarify the change in surname, Jenyns inherited property and money after the death of an extended relative, on the condition that he change his name to that of the family Blomefield.

[38] *Ibid*.

decline due to health issues and parish duties.[39] A member of many of the Cambridge Philosophical Society as well as the Zoological, Entomological, and Ray Societies, Rev. Jenyns earned the respect and admiration of his peers throughout the natural history and natural philosophy circles of Britain.

Jenyns' *Fauna Cantabridgiensis* was, in fact, an incomplete project. He and Henslow undertook the project of surveying and recording the beasts of Cambridgeshire (find out how many years since his death), with the aim of creating a full record of animals as a companion to those specimens that rested in the Museum of the University of Cambridge.[40] After Henslow's death in 1861, the project drifted from the forefront of Jenyns' priorities and, in 1869, with the hope that his notes might be of some use to the natural history community, he sent six volumes of notebooks towards *Fauna Cantabridgiensis* to the University of Cambridge.[41] The various notes and comments written by Jenyns in collaboration with Henslow form the basis of the newly published *Fauna Cantabrigiensis: The Vertebrate and Molluscan Fauna of Cambridgeshire by the Rev. Leonard Jenyns (1800-1893): Transcript and Commentaries* (2012), an attempt by R.C. Preece and Tim Sparks to showcase the contributions to natural history made by the nineteenth-century pair.

The majority of the original work done by Jenyns in *Fauna Cantabrigiensis* takes the form of brief statements speaking to the physical appearance, geographic habitat, and rarity of animals found in Cambridgeshire. Organized in order of mammals, birds, reptiles and amphibians, fishes and finally, Mollusca, *Fauna Cantabrigiensis* follows the same hierarchy of

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[39] Thomas Seccombe, "Blomefield [Jenyns], Leonard (1800-1893)", rev. Roger F. Vaughan, in *Oxford Dictionary of National Biography*, http://www.oxforddnb.com/view/article/2664.
[40] Leonard Jenyns, R.C. Preece, and Tim Sparks, *Fauna Cantabrigiensis: The Vertebrate and Molluscan Fauna of Cambridgeshrie by the Rev. Leonard Jenyns (1800-1893): Transcript and Commentaries*, 21.
[41] Leonard Jenyns, R.C. Preece, and Tim Sparks, *Fauna Cantabrigiensis*, 15.

class (albeit mollusks do not belong in the same phylum as do the other classes of chordate) as does Pennant's *British Zoology*. Like Pennant's work, Jenyns includes the genus of each species and attempts to include, for each entry, a location where he or a colleague has captured or spotted the animal. Interestingly, Jenyns notes that many of the observations were made either by himself or from people within the community. In his entry on the black rat (*Rattus rattus),* Jenyns states that, "I have heard that this species occurs sometimes in some of the old houses in Cambridge", and that "on the good authority" of a rat-catcher in the area, that the black rat appears very rarely in his trade.[42] Jenyns made good use of the first-hand knowledge of those in his community and showed no issue with accepting the expertise of one outside the community of learned societies.

A significant portion of the notes in *Fauna Cantabrigiensis* reference specimens within the collection at the University of Cambridge. This reliance on physical specimens demonstrates the importance that museums played in the production of natural history texts in the nineteenth-century. The establishment of museums across the country during this century, over 250 by the end of the period, dedicated to natural history alone, opened up countless opportunities for the display of natural history specimens.[43] For the aspiring or amateur naturalist, a trip to the museum could inspire, confirm hypotheses, or provide valuable evidence. The research value of these institutions, as well as their status as uplifting entertainment, was an asset to the community.

[42] Leonard Jenyns, R.C. Preece, Tim Sparks, *Fauna Cantabrigiensis*, 31.
[43] Silvio A. Bedini, "The Evolution of Science Museums", 19-20, Alberti, Samuel J.M.M., "Placing Nature: Natural History Collections and Their Owners in Nineteenth-Century Provincial England", 291.

The nineteenth-century was an era of great British pride, with the explosion of industry and expansion of the empire, Britons looked to their past—natural and human—as evidence for their place as one of the foremost powers of the world. The Industrial Revolution while it produced a great boom in the economy, worried many social commentaries as the movement swiftly urbanized many parts of a once pastoral landscape. Many of these critics were literary figures associated with the Romantic Movement, which sought to demonstrate "the dangers of sacrificing a sense of place in the pursuit of modernization."[44] The literature and poetry of this movement reflect a distinct dislocation from nature, an alienation that leads to the vice propagated by urban spaces. English writers were well aware of the role that the countryside played in establishing an identity of Englishness in contrast to other European landscapes. The uniqueness of the English landscape produced a sense of national pride—the wealth of landlords and the foodstuffs consumed by the nation all came from these rural communities.[45] The identification of the countryside as a factor contributing to Englishness produced a love of all things pastoral. The surge in popularity of landscape paintings is but one product of this desire to protect, preserve, and celebrate a picture of the pure form of nature and, in turn, Englishness.

A Final Word on Collecting

[44] David Higgins, *Romantic Englishness: Local, National and Global Selves, 1780-1850*, 87.
[45] David Higgins, *Romantic Englishness*, 45.

The urge to collect is not a recent cultural phenomenon limited to eccentrics and enthusiasts. The earliest collections and menageries have their roots in ancient Rome, where Egypto-mania was just as prevalent as it was in the early twentieth century. The collections that would eventually manifest into museums originate in the courts of the Renaissance nobility. The wealthy and influential amassed collections of Roman antiquities, modern masterpieces, and expensive exotica to show off to their courtiers.[46] This personal and social activity translated well with the rising influence of the 19th century bourgeoisie. The act of collecting can be deeply personal as well as public, depending on the purpose of the collection. These purposes, categorized by Samuel Alberti as "personal, society, municipal, and university" encompass the intended audience of the collection as well as the type of display (in the home, town hall, museum, etc.).[47] It is often the case that collections beginning as something meaningful to one person and grow into a public capacity through either donation or bequest to a museum.

The often deeply personal nature of collecting is reflected in the different methods people use to collect. Some objects have significance on their own, and others are significant because of what part they play in an entire collection (the whole is greater than the sum of its parts). Both of these motivations form what historian Jean Baudrillard defines as "systems of collecting," or what possessing an object means to the collector.[48] For naturalists such as Plot, Pennant, and Jenyns, the objects in their own collections or the collections of museums were primarily meant to be utilized, and any pleasure derived from possessing these items would be secondary to their usefulness in the advancement of natural history. While these three naturalists may not have

[46] Alberti, Samuel J.M.M., "Placing Nature: Natural History Collections and Their Owners in Nineteenth-Century Provincial England", 293.
[47] Alberti, Samuel J.M.M., "Placing Nature", 292.
[48] Jean Baudrillard, John Elsner, and Roger Cardinal, "The System of Collecting" in *The Cultures of Collecting*, 7.

owned extensive collections like that of Elias Ashmole, we might consider their texts as a form of collected knowledge. By classifying knowledge as an object that can be collected, it forces the lines to between collector and connoisseur to be blurred, especially within the realm of science, where, knowledge can be graded and put on trial.[49]

Before one can have a collection, one must create a system of classification to use in determining which objects do or do not belong within that collection. As John Elsner and Roger Cardinal have stated, "Noah was the first collector", which represents the deep-seeded need that humans have to create an order for the world on human terms.[50] For a naturalist, this means defining distinct categories for ordering the natural world. The problem of course, comes from the fact that ordering a personal collection of bottle caps will not incite international scientific debate the way calling a trout a mammal will.

The collections of knowledge compiled in the works of Robert Plot, Thomas Pennant, and Rev. Leonard Jenyns all contributed to the advancement of British natural history and science. Their texts represent attempts at unraveling, categorizing, and recording the flora and fauna of Britain, all of which placed them in the highest regard in the scientific circles of the learned philosophical societies in which they were members. These were three men operated not at the fringes of society, but within the upper crust of society, where the privilege of higher education afforded careers within academia and the church. Being born into the right family certainly aided these men in the ability to pursue natural history. Ultimately, these three naturalists stayed in their own back gardens to conduct their research, whether by circumstance or by choice, and this creates an unmistakable patriotism in the tone of their works.

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[49] Jean Baudrillard, John Elsner, and Roger Cardinal, "The System of Collecting" in *The Cultures of Collecting*, 10.
[50] John Elsner and Roger Cardinal, *The Cultures of Collecting*, 1.

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