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On the Ironic Specimen of the Unicorn Horn in Enlightened Cabinets

Abstract

This essay takes a material culture approach to the fate of the unicorn, that ultimate symbol of irrationality and credulity, in the natural history collection of the age of enlightenment. Exploring the interplay between unicorn horns, narwhals, rhinos, and other kinds of horn present in the eighteenth-century French collection, it shows that in fact unicorns never disappeared from the cabinet but rather presided over new narratives of what enlightenment was about. Further, it argues that this change in the status of unicorns was associated with changing patterns of the global whaling industry, which made narwhal horns widely available to Europeans and the narwhal into a natural historical object. What real objects could, or could not, be represented in the collection as specimens had an important bearing upon the credibility of animal kinds outside the space of the cabinet, yet within that space, the juxtaposition and financial value of specimens produced important narratives of the relationship between horn specimens and natural species like rhinos and narwhals existing in the real world—species which never completely shed their fictive character, like the unicorn itself.

Cardinal Jules Mazarin, minister to Louis XIV, owned not one but two very fine unicorn horns. They held pride of place in the cupboards that made up his collection in the Palais Mazarin on the rue de Richelieu, which today houses the Bibliothèque nationale de France. Both of these horns, it appears, were acquired after the exigencies of the Fronde, for they featured in the inventory of the collection drawn up after Mazarin's death in 1661 but not in an earlier one of 1653. One was a rather modest affair, as unicorn horns went, a mere two feet seven inches in length; in the probate inventory, it was valued at 30 *livres*. The other, by contrast, was seven feet in length, weighed "more than a hundred pounds," and had "the shape of four candles twisted together." It resided in its own case, made of red Moroccan leather embossed with gold. Both horns sat alongside "the most precious of jewels, enamelled cups of gold, agate vases, statuettes of lapis lazuli, among which one has a head carved into a ruby as big as a woman's breast, and the bust made of another precious stone called chrysolith."

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Yet it was the unicorn horns which were, in the opinion of a young Italian priest visiting Paris in 1664, "the most precious objects of that cupboard."[1] Linked to purity, magic, healing, and power, unicorn horns were exceptional items in the early modern *Wunderkammer*, owned by the privileged few.[2]

The unicorn has long featured in histories of early modern natural history as the very opposite of enlightenment. The progress of scientific knowledge, it is argued, led to the exposure of the unicorn as a creature of pure imagination, gladly relinquished by naturalists in the age of reason.[3] Reading about the sale of a collection that took place nearly a hundred years later, in 1756, in which lot number forty-eight was "A Narwhal's Horn, mounted upon a wooden horse's head," we might therefore be inclined to pity the poor collector apparently taken in by so transparent a deception and perhaps wonder a little, both that such an object was still in a collection at so late a date and that it was still being put up for sale at a public auction alongside other natural history objects.[4]

This article will argue that when the history of natural history is rewritten from the standpoint of material culture, a different story needs to be told. The unicorn did not go quietly. What, after all, were collectors to do with all those unicorn specimens? Once witnesses to the Western European epistemological inheritance from classical Antiquity, unicorns, both as material and as metaphysical objects, hung around collections well into the eighteenth century.[5] Their horns were typically displayed on busts (like the wooden horse head), mounted on the wall, or affixed to the tops of cabinets.

The historian's task then is not to use the unicorn as a classificatory tool for distributing past naturalists into categories of "enlightened" or "unenlightened." It is, rather, to take up a position within the cabinet where naturalists worked, met, and observed and account for what happened to the unicorn there. We can ask what role a mythical animal could continue to possess in collections *even after* its existence had come to be queried. In what follows, I shall utilize a combination of sources—auction catalogues, printed texts, material objects—and methods—object biography, museology, quantitative analysis—to explore the complex ontological relationships that subsisted between unicorns, cognate species such as rhinos and whales, the space of the collection, and the networks that produced natural historical knowledge in the Age of Enlightenment. I argue that a material culture approach forces us to reevaluate traditional stories of the unicorn as a being that lost all scientific significance during the eighteenth century. This methodology adds an extra dimension to the history of the collection as told through textual and visual sources.[6]

I: How to Raise a Unicorn?

To begin with, it should be noted that, in the first few decades of the eighteenth century, the debate over the unicorn's existence in the material world was not settled in French scholarly circles. In 1701, the rebel academician Antoine Furetière's entry on the narwhal described it as a "Large fish found in the seas of Iceland, which bears a long horn on its front part, that *many believe to be* what we call unicorn horn."[7] Readers were cross-referred to the entry "Licorne." Furetière's hesitancy about fully committing to a non-unicorn position was echoed in the writings of other contemporaries around 1700, such as the druggist Pierre Pomet, who included a plate showing five varieties of unicorn

Figure 1. Pierre Pomet, "De la Licorne," *Histoire Generale des Drogues, traitant des Plantes, des Animaux, & des Minéraux* (Paris, 1694), 9. Credit: Wellcome Collections, licensed under CC-BY-NC TBC.

in his monumental *Histoire Generale des Drogues* of 1694, while adding the cautionary note that the horn sold in the shops for medicinal purposes was that of narwhal and that the existence of the unicorn remained to be proven.[8] The unicorn could be seen, but not proven.

The reason why Parisian scholars up to the 1710s and beyond viewed the fictional status of the unicorn as provisional rather than absolute lay in reportage by the previous generation of Republicans of Letters. The theologian and antiquarian Nicolas Toinard, assiduous correspondent of John Locke, repeated a verbal description given to him by a Portuguese Jesuit he met in Lisbon in 1667, Jerónimo Lobo, who even claimed to have owned a unicorn foal which had later died.[9] The unicorn had thus been alive and well at the time of Mazarin and Toinard, and, certainly up to the 1710s, it remained a plausible beast in France. In 1718, a new translation of an Arabic manuscript from the library of a member of the Colbert family added veracity with its detailed description of the animal, including a reference to the consumption of unicorn flesh:

> The Unicorn is far smaller than the Elephant; from neck to tail, it is fairly similar to the Buffalo; it possesses extraordinary strength, which surpasses that of all other

> animals; its horn is not divided at its roots either to front or back, which are all of a piece up to the shoulders. Elephants flee before the Unicorn; its bellowing is very like that of an Ox, and bears some resemblance to the Camel's cry.[10]

This 550-year-old manuscript, with its eschewal of colorful personal incident in favor of empirical description of "the productions of nature, its marvels, the mores of the different peoples, and the Commerce to be had with them," possessed a credibility which some modern travel accounts lacked, according to the editor of France's leading scholarly periodical, the *Journal des Sçavans*.[11] It fitted better with learned standards of reportage. Nor was he alone in holding this view. The French translator of a 1743 edition of Aesop's Fables specifically referred both to the *Journal des Sçavans* review and to other recent scholarly publications as proof that "expert Critics" (*Les habiles Critiques*), after a period of doubt, had returned to believing in the unicorn as a real beast roaming remote forests inhabited by the Agaw people along the Tekezé river in Ethiopia.[12] Ironically, therefore, it was a book of fables that asserted the reality of the unicorn. The unicorn often features in histories of natural history as an emblem of the bad old past of pre-enlightened credulity. Yet it is very evident that much discussion of the unicorn was in fact driven by a pose of epistemological humility. Authors and collectors were well aware of their limited access to the distant natural world and of the likelihood that many animals that roamed it remained unknown or little-known. The existence of such nondescripts was even mandated by a "modern" worldview in which ancient knowledge was seen to be inadequate and in need of correction and addition, just as it was by a cumulative, Baconian project of natural history, which required new matters of fact to be sought out and legitimated by reliable witnesses.[13] Who knew what horned quadrupeds might not yet present themselves to the European traveler's distant gaze?[14] The material presence of the specimen before the eyes of the collector and her or his visitors was after all a very concrete testimony of existence, though of what remained uncertain. Collections were, by virtue of the very reasons that originally led them to be assembled, stuffed with animals that owners had not seen with their own eyes. To deny the unicorn admission to the cabinet on the basis of that particular induction was, effectively, to dismantle the whole science of natural history.

If discussion of the unicorn in print effectively resurrected it for some readers (and as we shall see, it did not die easily), its material history followed a separate course. In his much-reprinted work on medicinal drugs, the chymical physician Nicolas Lémery remarked that the horn had gone from being:

> formerly very rare, and kept in the cabinets of the Curious as one of the world's most precious things, as the one to be seen in the Treasury of the Abbaye de Saint-Denis attests. The reason for this rarity comes from the fact that the Narwhal was not yet known; but since many of these fish have been caught, the horn is hardly rare any longer, it can be found cut into slices in several Merchants' shops; it contains plenty of volatile salt and oil.[15]

Two trends are apparent in Lémery's comments. One is a decline in the rarity of horns as natural historical specimens, the other an increase in their commercial availability. *Wikipedia*'s entry on the narwhal, which may serve as a benchmark for today's "common knowledge," optimistically asserts that it came

to be understood as the source of unicorn horns "during the Age of Exploration, as explorers and naturalists began to visit Arctic regions themselves."[16] But Lémery's account tells a different story. European whaling became firmly established in the late 1630s, once territorial disputes between the Dutch, Danes, English, and French had been resolved, and accelerated in the 1710s when the Dutch began regular open sea whaling.[17] Modern commercial whaling led to exponential increases in the catch rate from 1750 onward.[18] The supply of narwhal horn to Europe was a lucrative by-product of the intensification in the whaling trade that was occurring during this very period. Collectors and artisans were the unwitting beneficiaries of these distant transformations, as Lémery's comments show. It was thus not scientifically driven exploration but rather global commodification that led to the conditions under which the unicorn's existence could be credibly denied by the chymist.

Even though Lémery forthrightly rejected the reality of the unicorn, he still described it in detail, like all the other animals in his book:

> A large animal with four feet, similar to a horse, bearing a straight horn, twisted into a spiral, on the top of its head, some two to three feet long and pointed, which serves it as a weapon: but this animal is nowhere to be found, and none of those who have written about it claim to have seen it; even the place where it originates has not been identified: it is true that a white horn, resembling ivory, very hard, heavy and up to two ells in length, twisted and hollow inside, known as *Unicornu*, does reach us, and that we use it in medicine; but that horn comes forth from a large fish known to the Icelanders as *Narwhal*, as I shall say when I get on to talking about this fish.[19]

At least up until 1746, the date when unicorn horn disappeared from the official French pharmacopœia, it remained important to pursue reports of the animal's existence for reasons other than natural historical accuracy: unicorn horn was a central ingredient of the antidotes that were sold by many apothecaries.[20] Its authenticity was thus a matter of more than mere curiosity, for there were potential health consequences attached to inadvertently assimilating the character and qualities of a different animal, unknown and unimaginable. A part from the body of a fish potentially had very different medicinal properties from the horn of a quadruped. These were not indifferent considerations if one were considering *ingesting* unicorn for medical reasons.

It seems then that the first decades of the eighteenth century were a key period in the unicorn's material history as a substance one might consume, as well as display in an apothecary's shop, a home medicine chest, or even a natural history cabinet.[21] Reflecting upon unicorn horns as material objects that were traded, cut up, or hung on the walls might make us ponder the conditions for asserting or denying the veracity of natural kinds and the ways material objects could be deployed in the collection as evidence.

II: The Ironic Unicorn

The unicorn was a tripartite beast. It might be itself; it might be the narwhal; it might be the rhinoceros. In considering how the material culture of the cabinet set the terms of the debate and established the relative, interlinked meanings of these beasts, it is useful to examine the "object biographies" of some

of the horns, which metonymically represented the whole, absent animal within collections in the later eighteenth century.[22]

The rarity of the unicorn in collections reflected the rarity of quadruped specimens in general right up to the end of the eighteenth century in natural history collections. Overwhelmingly, "animal" specimens in collections meant shells and, to a lesser extent, reptiles, fish, birds, insects, crustaceans, and other marine animals such as starfish or sea urchins. Horns, hooves, tails, teeth, bones, and beaks were the most common representative parts of larger animals because of their comparative ease of collection, preservation, transportation, and display. In the French case, shells represented 65 percent of all specimens mentioned in the comprehensive survey of natural history collections that was included in the third edition of Antoine-Joseph Dezallier d'Argenville's *Conchyliologie* of 1780. Birds, the next largest category, represented 24 percent, dried fish 22 percent, insects 17 percent, and reptiles 15 percent. Butterflies alone amounted to 11 percent of the total. By contrast, dried body parts of larger animals, including horns, represented just 5 percent, and wet preparations were even more scarce, at 3 percent. Even one single classificatory group from amid the shells, the oysters, constituted 16 percent of specimens, being mentioned, more than three times as often as quadruped specimens. Just 2 percent of the specimens mentioned were of cetacean origin.[23] This source, with its emphases reflecting the collector's own interests, can only yield approximate figures. Moreover, the generality of the categories used creates overlap between terms such as "animal," "fish," and "cetacean," which can only be differentiated through further research. Nonetheless, it is clear that dried body parts of larger animals formed a tiny minority of collected objects. The argument usually invoked to explain the discrediting of the unicorn, namely that no other parts of the animal *besides* the horn were to be found in collections, thus falls. For most of the eighteenth century, the vast majority of large quadrupeds and fish were only represented by just such durable, manageable body parts. It would not be until the very end of the century that new techniques using arsenical soap would make possible the preservation and mounting of quadruped skins as lifelike simulacra of whole animals. However, it was, and indeed remains, impossible to apply such techniques in the case of cetaceans, whose skin can only be preserved with the utmost difficulty.[24] In the fact that material evidence of its existence beyond the horn was lacking in French collections around 1700, the unicorn was no different, say, from another frequently cited *monoceros*, the rhinoceros, whose detached horn was likewise used in medicine, again as an antidote, and which had historically also doubled as a unicorn.[25] To assert that the rhino actually existed was in effect to perform the same epistemological manoeuvre as the translator of the *Fables*, relying upon a combination of physically present horns and distant scholarly reports. Few other traces were available to collectors during the first half of the century; no wonder then that the Royal Society deemed its specimen of "Skin on y^{e} Buttock of a Rhinoceros" worthy of immortalizing in print.[26] The narwhal was in the same case: the likelihood of seeing one alive in Paris or London was even more remote than seeing a centaur.[27] It would take more trouble than this to abolish the unicorn as a real animal.

As with all the other animals whose presence in collections consisted of horns and nothing more, naturalists had to fall back on reliable accounts by travelers to account for the existence or nonexistence of unicorns, and these

were at best equivocal. It was a classic case of experimenter's regress, in which personal authority became the only way to establish truth.[28] Authors trod a perilous boundary between fable and reality in extrapolating from the three sources of evidence—material, textual, and visual—that they had at hand. Given that the judgement of posterity might hinge upon the ontological gamble of collating body parts with real natural kinds, this was a fraught endeavor indeed in the case of any animal represented in collections only by a beak, jaw, tail, or, as it might be, horn. If proving the existence of the unicorn was a difficult matter, *dis*proving it was even more vexed, especially while standing in front of its horn and in light of centuries of textual reportage. Authority proved of little value in prosecuting the debate over the unicorn's veracity, whose horn was severed from its carcass in an epistemological as well as material sense. As Peter Dance has shown, naturalists began debunking fake specimens using the techniques and knowledge-claims of anatomy by 1800.[29] But given that the unicorn was represented solely by its horn, anatomical expertise was of little use, for no one in this debate was asserting that the horns were fake. Anatomists' sceptical epistemological self-positioning, as scholars capable of wrestling with and subduing chimeras before ejecting them from the realms of nature, failed in the case of the unicorn horn. It became a real object attesting to an unreal one: a signifier of an unstable world of knowledge and an illusory world of matter. The horn's very materiality and presence in the space of the collection made claims that its bearer was imaginary harder to sustain.[30]

By the second half of the century, unicorn horns were only rarely listed in collections *as* unicorn horns, however. Scholarly consensus had provisionally been achieved in Paris over the claim that unicorns did not exist, as Lémery's widely-read comments above reveal. Nonetheless, even those who accepted the nonreality of the unicorn still owned and displayed "unicorn" horns, that is, the horns of narwhals. Historians have sometimes presumed that the presence of such objects in collections attests, as polemics by reformers claimed, to the continuing backwardness and ignorance of the collectors who owned them. But this overlooks the fact that specimens had an ironic, in addition to a literal, role to play within the natural history collection. The tax farmer Joseph Bonnier de La Mosson owned two narwhal horns, which functioned in complementary ways within the collection. When this collection was auctioned, lot 368 was "one of the finest and largest Narwhal Horns to be found." According to the auctioneer, Edme-François Gersaint, it was "attached to the end of the muzzle of a Narwhal head, very well sculpted in wood, and made just as this animal is depicted." The next lot, 369, was "a Unicorn or Narwhal Horn as fine as the preceding one," only this time it was "attached . . . to a very accurately sculpted head made just as the Unicorn is depicted."[31] In a footnote, Gersaint observed,

> For some time now we have been disabused of our erroneous view that this horn was a defence on the head of an animal known as Unicorn. Since only suspect Authors have been found to have spoken of it, without even being able to say that they had seen one, nor the place where it was born, it was recognised that this was nothing more than an imaginary being, authorised purely on hearsay and in unfounded reports; & it was later found that this horn was the weapon . . . of a certain large Fish called Narwhal.[32]

The inclusion of the horns in the collection was, in other words, an occasion for reflecting upon unenlightened errors in natural history, and not, as the art historian Katie Scott has suggested, a claim by Bonnier de La Mosson that unicorns existed.[33] The dramatic, twisty material objects in effect served as an invitation to think about the equal absence-presence of *both* unicorn and narwhal from inside the collection. Bonnier's horns, mounted on the fronts of cabinets, could serve as a focal point for story-telling about how enlightened collecting dispelled the obscurity that had reigned over earlier knowledge. Quite likely this is how they functioned within the collection itself: as objects around which visitors could gather to listen to the narrative of error corrected, order prevailing. The artificial unicorn and the equally artificial narwhal conducted an ontological conversation across museum space, perpetually facing off against one another.[34] Yet, as living animals, both were in effect equally unreal, as far as collectors were concerned.

"Unicorn" horns thus survived within the eighteenth-century cabinet as boundary objects, which provoked reflection on the classification process itself and the ways that ordering stabilized categories, overcame fraud, and corrected error.[35] The inclusion of these items was part of the rhetorical positioning of collecting as an enlightened act that took place in, and through the description of, cabinets. These were spaces where category boundaries were actively reflected upon and verbally, materially, and visually (re)enacted through conversations, observation, gestures of placement, and the constant flux of specimens into and out of the collection.[36] The debunking of unicorns as an ontological category did not prevent their horns from remaining desirable adjuncts to enlightened cabinets, even if they declined in financial value and changed in significance. They now became a symbol, not of extreme rarity, but rather of the program of putting the world to rights for which the collection stood. Retaining an invisible presence even in the enlightened collection, they stood for all the illusions that the progress of reason would correct. That is, they represented the power of enlightenment. In this sense, the horns continued to play an important part in the dialogue between the collection and the viewer.[37] They were jokes of reason that illuminated the deeper connecting principles giving meaning to the collection as a whole.[38] Like Bonnier de La Mosson's specimen, the "Corne de Nerval, montée sur une Tête de Cheval en bois" (narwhal horn mounted on a wooden horse's head) that belonged to the collector Jean-Omer Joly de Fleury probably served such a purpose for this wealthy clergyman, a member of a leading *parlementaire* family.

Joly de Fleury was an active collector of the most fashionable categories of specimens of the day: petrifactions, crystallizations, minerals, gems, and shells. The narwhal horn was not listed among the objects included in the close confines of his jewel, mineral, and shell collection. Instead, it appeared in lots taken from a second room, whose main purpose was as a receptacle for objects representing the fine and mechanical arts: a model plough, a mechanical bed, a printing press; optical, astronomical, pneumatic and electrical apparatus and toys, Chinese objects in ivory and wood, maps, "savage" weapons, musical instruments, an anatomical mannequin. That is, the narwhal horn was allied with the area of the collection designated for natural materials worked by human hand. This collector was not, as we first assumed, the poor dupe of avaricious merchants, but rather an instructed and enlightened participant in the scientific

culture of the 1750s, which emphasized the coupling of learning with entertainment, and, characterized by a close association between the fine and mechanical arts, viewed human intervention upon natural materials as the acme of their existence.[39] The salient feature of the wooden horse-head, relative to the specimens with which it shared space, was its implication in a narrative of artistry, both human and natural; but it was placed in the camp of the artificial.[40]

While we might assume that when references to horns as unicorn horns declined, this must effectively have marked the lasting disappearance of unicorns from the cabinet, a study of how narwhal horns were used in collections quickly dispels this illusion. A note on auction catalogues is in order at this point.[41] Produced by the dozen in the later eighteenth century, they had a complex relationship with the collections they purported to present for sale. As the naturalists Pedro Davila and Jean-Baptiste de Romé de l'Isle would note in 1767, the writing up and preparation of a collection for sale at auction was a process of rupture, which involved breaking established spatial and taxonomic relations present within the cabinet itself to bring specimens together into individual saleable lots. Davila felt this particularly because he was forced by personal circumstance to sell his very extensive collection, compiled over two decades, and return to Peru.[42] The classification of specimens into lots was experienced by this collector as a disjuncture, an imposition of artificial divisions upon a more holistic Nature composed of countless "chaînons" (small links) between one specimen and another, which could only be properly visualized within the space of the collection. Not only the taxonomic but also the material interrelations between objects were fractured by the awkward act of removing specimens from walls, ceilings and cabinets in order to relocate them to the auction house. Davila's situation was particularly unfortunate, however, for usually this process happened only after the collector was dead.[43]

Despite collectors' concerns, auction catalogues often still betray certain relationships of proximity between lots, which must either have been a hangover from how specimens were actually displayed within the collection or else a product of the way the auctioneer wanted to present them for sale. In either case, these juxtapositions are richly suggestive as to the status and significance of narwhal horns. Auctions were invariably preceded by two or three days during which the individual lots were put on public display in the auction house or the owner's own residence. Even these ephemeral displays acted as a kind of temporary collection, in which spatial relations and ordering were used to craft particular narratives about individual specimens. Such conversations of the material are ones which were never made explicit in publications but which allow the historian to draw inferences from positionality. A couple of interesting examples are worth a closer look, for they show how narwhal horns continued to be co-opted for stories about unicorns.

In Davila's auction catalogue, the narwhal horn features in the first of three substantial tomes which, together, made up a rich description of his cabinet. The comments made by the collector in his preface make it apparent that the actual spatial relations between objects had been disrupted by the process of allocating them into lots for the auction format. Nevertheless, in the brief section headed "Fish" (Poissons), the narwhal horn figured immediately after a larger lot, consisting of forty-four small fish—some dried, others in spirit of wine—each possessing some outstanding peculiarity that could attract the attention of

the curious, such as remoras, sea scorpions, or flying fish. The narwhal horn was already being set up as a rarity. The final item in this large lot, possibly therefore spatially closest to the narwhal horn in the collection, was "a fake *Basilisk*" (un *Basilic* factice).[44] The juxtaposition of this object with the narwhal horn in the succession of lots, perhaps also in the order in which visitors would have viewed the specimens while touring the cabinet, and certainly in the order in which these objects would have come up for sale, suggests that common reflections on facticity linked the narwhal horn with the basilisk by analogy. Both bore witness to the former errors, illusions, and deceptions that afflicted the past of natural history. These specimens perdured in Davila's cabinet in order to tell the same story that was told in Bonnier de la Mosson's, of obstacles overcome, a dramatic story of disclosure and the righting of wrongs. Yet even the lesser artifice and playfulness of human tricksters could be encompassed within the cabinet's larger narrative of Nature as artificer. That is, there was no *obligatory* requirement to differentiate clearly between that which was human, and that which was natural. Objects like factitious basilisks and unicorn/narwhal horns were present in the cabinet in part because of the way they provoked comparisons between nature and man as makers.

Despite its positioning as an instrument of enlightenment, the narwhal never succeeded in escaping this facticity, imposed upon it by its historical role impersonating the unicorn horn, just as the unicorn horn was alluded to as an impersonation of the narwhal by numerous authors. Visitors to the cabinet could be presented with both the unicorn horn and the basilisk as physical ironies, proofs of their own nonexistence; by virtue of being juxtaposed, both were placed on the same ontological plane. Much the same kind of gambit underpinned both Bonnier de La Mosson's and Joly de Fleury's deployment of their unicorn horns within the space of the cabinet. It is in this way that we can infer that visitors to the Davila cabinet may well have been shown the narwhal horn *in order* to talk about the unicorn.

The next lot listed in the auction catalogue, a six-foot whale pizzle, highlights other kinds of pressures on the narwhal horn, such as its size and physical unwieldiness within the space of the collection, that conjured different sets of allusions and relationships out of it. These two awkward yet valuable objects had to be accommodated somehow. There was in any case a somewhat phallocentric competition in unicorn horns, as the Mazarin examples suggest; the winner was he who possessed the longest, heaviest, and thickest, so that dimensions were invariably provided in the auction catalogues.[45] Size also correlated with value. Mazarin's largest horn, together with its case, was valued in 1661 at the jaw-dropping sum of two thousand *livres*. Prices did come down significantly, as Lémery indicated; yet even during the later eighteenth century, narwhal horns were still fetching significantly high prices by comparison with other kinds of specimens, and particularly with the relatively unpopular fish specimens. Davila's seven-foot narwhal horn was by far the most valuable of his lots in this category at auction, selling for fifty-four *livres* one *sou* to the abbé Guillaume.[46] Although unicorn horns had ostensibly lost both their epistemic value and a good part of their rarity value, they manifestly continued to be prized possessions.

A further example serves here to highlight the ways juxtaposing specimens created a dialectic that bridged classificatory divides. In the extensive collection

of Achille-Joseph de Robert de Lignerac, duc de Caylus, sold in 1773, the narwhal horn is not to be found (as with Davila) among the fish at all. Rather, it appears in the section "Quadrupèdes, within a sequence of specimens" operating as a formal declension—a grammatical logic known to users but rarely articulated—which begins with animals curious largely by virtue of their exoticism, rarity, and/or unusual physical or moral attributes (a lynx, anteater, flying squirrel, sloth) and ends with anatomical preparations. Between these two termini, there appears the following suite of lots, which I reproduce in its entirety here:

> 755 The head of an ibex.
> 756 The head of an ibex, and that of an antelope.
> 757 The head of a porpoise, and a rhinoceros horn.
> 758 A horn of the fish narwhal, 7 feet 10 inches in length.
> 759 Another horn of a like fish, 6 feet 8 inches in length.
> 760 Another, 5 feet 4 inches.
> 761 The priapus of a whale, 6 feet long, and the vertebræ of a fish or of a snake.
> 762 A chamaeleon and the head of a partridge with a singular beak, in a glass case; a large goitrous lizard from Cayenne.[47]

This sequence progresses through a series of classificatory arguments. The horn of the rhinoceros follows immediately after several lots containing horns from other quadrupeds, allying like with like. But it is placed in the same lot as the head of a porpoise. The logical progeny of this conjugation between the horn of the rhino—another contender for unicorn-dom and like it a creature of dubious plausibility—and the head of the cetacean is then the narwhal horn.[48] This eminent nobleman could boast of possessing three, which went at auction, respectively, for thirty-four, thirty-nine, and twenty-two *livres*. Once again, the narwhal's horn is succeeded by the whale's pizzle, then by the chamæleon, another animal whose precise classificatory standing was the subject of extended academic debate in the early part of the century.[49] That is, the section of the catalogue devoted to quadrupeds produces a narrative arc that moves from animals that are "routinely" exotic or curious, to a sustained comparison of horns that abuts in the narwhal, a creature so much bordering on the fabulous as to form a passage-point to the monstrous "partridge head with a singular beak." This passage from normal to abnormal seems to have been fairly standard in quadruped collections, since elsewhere monstrous specimens are also listed at or near the end of the sequence of animal lots in this way.[50] For the purposes of this essay, the important thing to note is that the narwhal, although clearly stated to be a fish in this auction catalogue, simply could not shake off its associations with the quadruped unicorn, which was constantly reasserted within the space of the collection. The sequence also accords the narwhal a very precise ontological place as liminally monstrous and fabulous.[51] Somehow, the narwhal horn was still not quite "real." And it was placed with its own kind: other animal specimens that were persistent classificatory dilemmas, recidivist offenders against enlightened attempts to put the "world in a box," as the historian Anke te Heesen has termed it.[52]

III: The Chimerical Gnu

Unicorn horns thus kept their place among the most valuable, although not the most ubiquitous, of cabinet specimens, and throughout the eighteenth century they continued to be a talking point, a star character among the collection's cast of objects. Today the situation is different. At the Geowissenschaftliches Museum in Göttingen, Germany, a narwhal horn inherited from a nineteenth-century collection resides in a collapsible plastic box in the basement, swathed in fabric, away from the eyes of the museum's quotidian visitors. A slight embarrassment now reigns over unicorn horns, or else they merit an indulgent nod to past credulity. Their presence before the eyes, in the physical space of the cabinet, is no longer required for natural history to go on, or rather, they have become an impediment. So, the seriousness of their message for eighteenth-century collecting publics has been wholly lost. Other techniques of proof and verification, including dissection and DNA analysis, have overtaken the horns' epistemological role as guarantors of scientificity and signposts for classificatory endeavors.

In an important sense, all beasts in the collection were and are fictional beasts. That is, their material remains are always separated from their identity and nature, their circumstances of existence. It is probable that this epistemological gulf was even more apparent to early modern collectors than to ourselves, living as we do after the developments in preserving technologies that made possible the generalized and eternalized display of stuffed animals that most people associate with natural history collections nowadays. The rush to embrace comparative anatomy and zoology that was very imminent in France by 1789 overwhelmingly shifted the priority of collectors toward these new kinds of animal specimens.[53] In what Rachel Poliquin has memorably termed the "breathless zoo," the ideal of truth to nature is performed over and over again by these parades of corpses, remodeled for the purposes of consumption and set out to represent "the natural world," however accounts of it may change over time.[54] But in the early modern collection, even as late as the 1760s and 1770s, this was not so. Stuffed skins, anatomical preparations, and even mounted skeletons represented exceptional rather than typical objects of the natural history of animals; their increasing prominence in collections after this date was only possible thanks to the sweeping transformations in taxidermy mentioned above.

Of course, the beast in duplicate that made up the possible-impossible unicorn was itself highly unstable. In the same period in which the unicorn evaporated as a real kind, the narwhal also failed to stay put. It migrated across boundaries, moving from the category of fish to that of cetaceans, a zoological category which, as it were, slowly hove into view during the eighteenth century. This process can already be seen in Caylus's cabinet, with its association of porpoise, narwhal, and whale.[55] Georges-Louis Leclerc, comte de Buffon, mentioned the narwhal only four times in his *Histoire naturelle, générale et particulière*: thrice in the *Histoire naturelle des minéraux*, in the context of discussions of the preservation of hard animal parts dug up from the ground, and once in his speculative *Supplément*, alongside other whale species in the context of a famous discussion about how global cooling and human ingenuity had largely annihilated the monsters produced by savage nature in the earth's past.[56] By contrast, his protégé Bernard-Germain-Étienne de la Ville-sur-Illon, comte de Lacepède, to

this day remains best known for his work on whales, *Histoire naturelle des cétacées*. Despite holding a chair concerned with the history of reptiles and fish, Lacepède argued emphatically that cetaceans possessed a greater kinship to quadrupeds than to fish, resting his case on their warm blood, aerial respiration, and lactation. To do so, he had to subscribe (without speaking the name) to the class of *Mammalia* constituted by Buffon's arch-enemy, the Swedish naturalist Carolus Linnaeus, in 1758.[57] But it was Lacepède's "elegant and classical work on the *Cetacea*, which for so many years has been the most popular treatise on the subject," as William Jardine would describe it in 1837, that did much to establish the cetaceans as a group quite distinct from the fish.[58] In so doing, Lacepède still seized the opportunity to turn the narwhal into a slightly more feisty, marine equivalent of an African quadruped, only now the point of comparison was the elephant.[59]

If the narwhal received short shrift in Buffon (even by comparison with other authors writing at the time), the unicorn did however put in a cameo appearance in the *Histoire Naturelle*, namely in the sixth volume of the *Supplément* in an essay on the gnu sent to the traveler Georg Forster by the Swiss naturalist Johannes Nicolaas Sebastiaan Allamand, curator of the University of Leiden's museum since 1751.[60] Thanks to two sources who had traveled into the African interior, the military commander Robert Jacob Gordon and an anonymous correspondent who had sent a sketch, Allamand had at length become convinced that the gnu was "no chimerical animal, but a real animal whose race was very numerous in Africa."[61] The new species was instantly processed into specimens: a head with horns for the Leiden academy, of which Allamand was a member, and a living gnu for the menagerie of the prince of Orange. "It is astonishing," he commented, "that such a large and singular animal as this, and which is probably to be found in the areas that Europeans have penetrated, should have remained unknown up to the present day."[62]

Following a lengthy discussion in which Allamand tried to connect the gnu to earlier descriptions by Lobo, Aristotle, and the Chinese, he returned to the wider implications of this perplexing new discovery: the gnu "constitutes a very singular species, which combines the strength of the head and horns of a bull, the lightness and pelt of a deer, and the splendid mane, body and tail of a horse. In time, might one not also come to know the unicorn, which is said to inhabit the same area, and which the majority of Authors see as an animal from fables, while others assure that they have seen it and even captured some of its young?"[63] Buffon (who in an earlier discussion had cited Pliny's dismissal of "sphinxes, pegasus, unicorns and the other prodigies or monsters which Ethiopia produces") here interjected that he had "nothing to add or subtract from this fine description or the learned Mr Allamand's very judicious reflections."[64]

What is particularly interesting about Allamand's words is that they make explicit the way that naturalists *always* constructed the animal object of natural historical knowledge as a composite, as it might be the narwhal's horn appended to the horse's head. Here we can see Allamand performing this operation verbally, building up the gnu as a read object out of a collection of familiar body parts like the bull's horns. But as a material object, this was also how a large animal specimen had to be manipulated in order to incorporate it into the collection: by taking it apart, then reassembling it—sometimes out of the parts of other animals.[65] The fictive quality of this textual and material composition of

the species within the cabinet meant that each specimen that supposedly bore witness to the presence of a real natural kind was always already an artifice, and the more sophisticated preservation techniques became, the more this was the case.[66] The existence of the gnu, Allamand's rendering of the Khoisan name for this animal, then further accredited the possibility of the quadruped unicorn in Africa, which European naturalists were still so loath to abandon entirely.[67]

IV: Vanishing Points

Nearly disappearing in the shadows, at the top of Charles-Nicolas Cochin's famous frontispiece to the catalogues published by the auction house of the artist Pierre Remy from the late 1750s onward, lurks a most unusual object: what appears to be the whole body of a small narwhal.

How did the narwhal itself come into focus in the later eighteenth century? In Buffon's systematic discussion of the animals populating the earth's surface, the narwhal had no autonomous existence. This was partly because Buffon himself did not get around to the fish, underscoring how cetaceans as a group generally remained within that category until late in the century. The narwhal was allied with other whales from early on. Whaling was so lucrative a trade that several European rulers became involved in it during the seventeenth century, and coastline colonialism in Spitsbergen, Greenland, and the east coast of North America revolved around it. This led to the production of the classificatory category of cetaceans, inter alia the narwhal, a frequent companion of larger whale species in feeding grounds. It was no coincidence that it was in Hamburg, a port town heavily dependent upon whaling, that a definitive study of whales was written in the middle of the eighteenth century by the town's burgomaster, Johann Anderson.[68] At its heart was one key specimen of exceptional rarity: a two-horned narwhal, killed in 1684 by Dirk Petersen, captain of the ship *Guldener Löwe*, out of Hamburg. The "obern Kopfknochen mit den darinn steckenden beyden Zähnen" (upper skullbone with the two teeth stuck into it) was brought back to Hamburg, advertised in flyers, and eventually sold to a private collector.[69] The object then entered what Craig Clunas has termed an "iconic circuit."[70] It was engraved and published in Anderson's book and reappears again in the plates accompanying Lacepède's *Histoire naturelle des cétacées*, one of only a couple of images that do not show whole reconstituted whales with affectedly stylized water-spouts.

On Lacepède's plate, however, the image of the Hamburg specimen is reversed, indicating that it was copied directly from Anderson's book.[71] Unlike the usual collection specimens—which consisted of nothing besides the horn, the focus of attention and the valuable commodity—Petersen's rarity included part of the skull of the female narwhal to whom the tusks had belonged.[72] To prove that this specimen indeed possessed two horns, it was necessary to treat it as something distinct from a commodity and retain parts that, under normal circumstances on a whaling expedition, would have been discarded. The Petersen specimen was the closest Lacepède came to illustrating the horn as a free-standing object. Certainly, it was shown—like earlier unicorn horns—denuded of all the social and economic circumstances of its production as a specimen. The preservation process that fitted it to play its iconic role in the collection and in print thus still involved a particular set of purificatory rituals that

Figure 2. Pierre-Charles-Alexandre Helle and Pierre Rémy, *Catalogue raisonné d"une collection considerable de coquilles, rares et choisies, du cabinet de M. le **** (Paris, 1757), frontispiece, drawn by Augustin de Saint-Aubin, engraved by Charles-Nicolas II Cochin. Credit: Wellcome Collection, licensed under CC-BY-NC.

removed the flesh from the head and the traces of its social origin from its depiction.

Unlike Göttingen's horn, Hamburg's remains on show, now at the Centrum für Naturkunde of Hamburg University. To this day, the skull remains the only known specimen of a female narwhal with two tusks. The German term *Geweih*—that is, "antler"—rather than *Stoßzahn*, or "tusk," is still often used to refer to narwhal horns, continuing the linguistic tie between this animal and

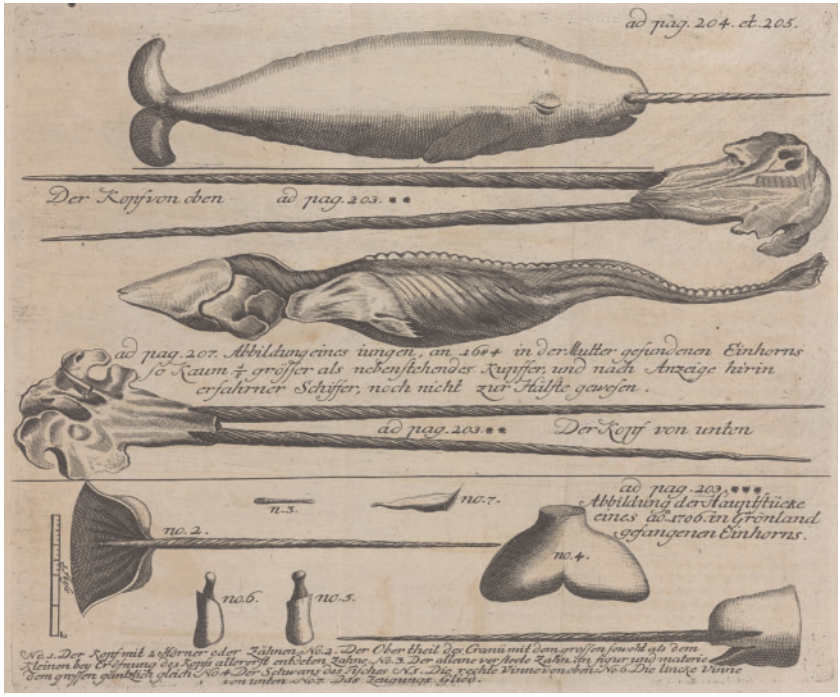

Figure 3. Johann Anderson, *Nachrichten von Island, Grönland und der Straße Davis, zum wahren Nutzen der Wissenschaften und der Handlung* (Hamburg, 1746), plate opp. 204. By permission of the Syndics of Cambridge University Library.

horned quadrupeds.[73] The specimen manifests itself in three guises: as a representative of the abandoned unicorn; as a metonym for the town's whaling history; and lastly as a monster, something unique that escapes the normal laws of nature. So important an icon did this particular object become that it is familiarly known as the museum's "Mona Lisa." During World War II, it was the only one of the collection's specimens to be saved from a devastating fire.[74]

The fixed points to which modern readers might seek to distribute the immortal remains of the unicorn were thus themselves anything but fixed. Of this category of object, it is in the end simply impossible to state what it "really" was. Even the double-horned Hamburg specimen seems to perpetuate the mystique: it is currently undergoing DNA analysis to confirm its gender, since female narwhals generally lack horns altogether, and no other female narwhal has ever been found to possess two horns. As in the past, the specimen's authenticity is not in doubt, but the natural kind to which it should be allocated remains obscure: it is still a monster. Yet, ironically, it was this material object, unrepresentative of any category—including its own—that appears to have been a point of reference for constituting a science of the narwhal in its own right. Animals, in this way, seem always to resist the reductionism of the collection. The unicorn serves as a reminder of Bruno Latour's observation that we have never been modern and as an example of his call to resist "Occidentism, a form of exoticism

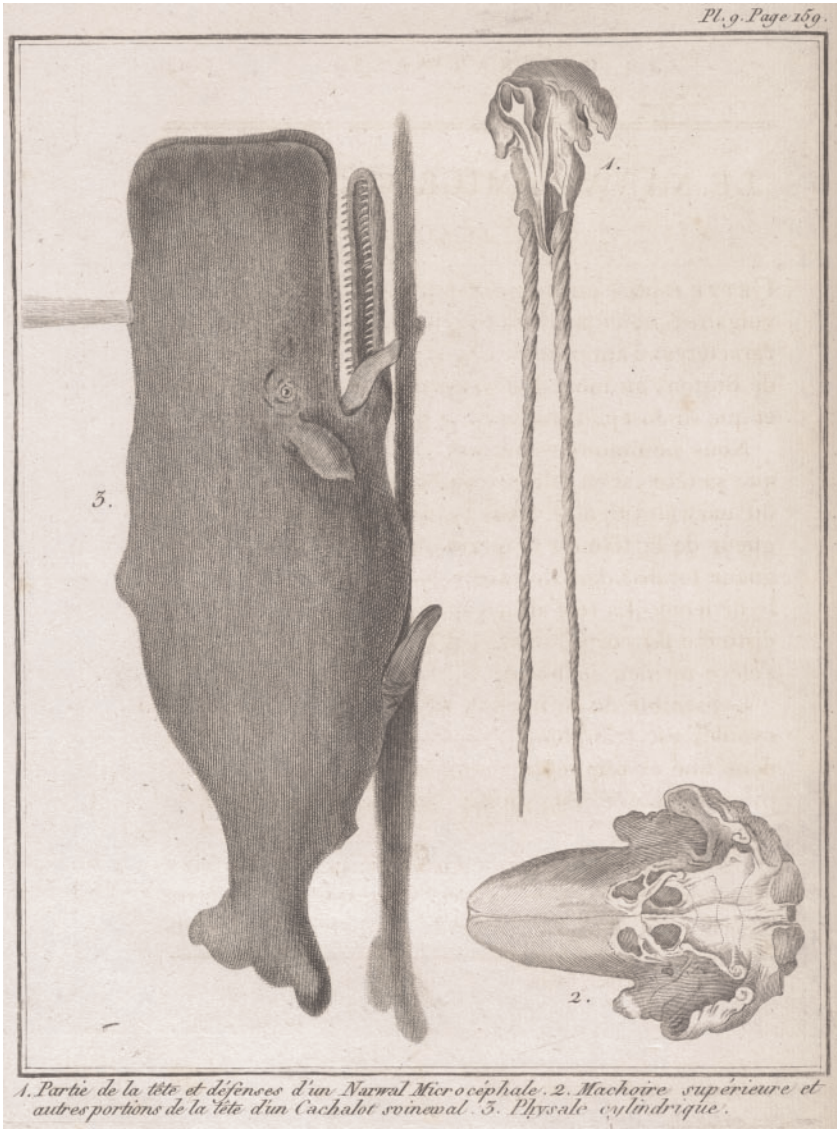

Figure 4. Bernard-Germain-Étienne de La Ville-sur-Illon de Lacepède, *Histoire naturelle des cétacées* (Paris, 1804), plate 9, opp. p. 159. By permission of the Syndics of Cambridge University Library.

applied to what is close at hand, which consists in believing what the West says about itself."[75] Hopefully, it is apparent that this essay is less concerned with what the unicorn might actually "have been" than with reflecting upon the conditions under which it was possible to say, from the vantage point of the cabinet: this species really does exist.

Endnotes

With a respectful nod to William Clark's "On the Ironic Specimen of the Doctor of Philosophy," *Science in Context* 5, no. 1 (1992): 97–137, an essay everyone should read. My warmest thanks go to Nick Jardine, Alan Ross, Clare Griffin, Phoebe Harker, Ross MacFarlane, Dominik Hünniger, Selina Hurley, Alexander Gehler, Edwin Rose, Laia Portet, Alisha Rankin, and an anonymous reviewer for helpful comments and advice on specimens. Address correspondence to Emma Spary, Corpus Christi College, Cambridge CB2 1RH, United Kingdom. Email ecs12@cam.ac.uk.

1. Sebastiano Locatelli, *Voyage de France. Moeurs et coutumes françaises (1664–1665)*, ed. Adolphe Vautier (Paris, 1905), 131: "des joyaux les plus précieux, tasses d'or émaillé, vases d'agate, statuettes de lapis lazuli; une entre autres a la tête taillée dans un rubis grand comme un teston, et le buste fait d'une autre pierre précieuses nommée chrysolithe."

2. On the unicorn, see especially Antoine Schnapper, *Collections et collectionneurs dans la France du XVIIe siècle*, I: *Le Géant, la licorne et la tulipe* (Paris, 1988), 87–94; Odell Shepard, *The Lore of the Unicorn: Myths and Legends* (London, 1996); Bernd Roling, "Der Wal als Schauobjekt: Thomas Bartholin (1616–1680), die dänische Nation und das Ende der Einhörner," in *Zoology in Early Modern Culture: Intersections of Science, Theology, Philology, and Political and Religious Education*, ed. Karl A. E. Enenkel and Paul J. Smith (Leiden, Netherlands, 2014), II: chapter 4. On curiosity and the *Wunderkammer*, see Lorraine Daston and Katharine Park, *Wonders and the Order of Nature, 1150–1750* (New York, 2001); Oliver Impey and Arthur MacGregor, eds., *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, 2nd ed. (London, 2001); Andreas Grote, ed., *Macrocosmos in Microcosmo: Die Welt in der Stube. Zur Geschichte des Sammelns, 1450–1800* (Opladen, Germany, 1994); Alexander Marr, "Introduction," in *Curiosity and Wonder from the Renaissance to the Enlightenment*, ed. R. J. W. Evans and Alexander Marr (Abingdon, UK, 2006).

3. Thus, Bruno Faidotti, "Images et connaissance de la licorne (fin du moyen-âge—XIXème siècle)," (PhD diss., université Paris XII, 1996), I, 200, omits the "siècle des Lumières qui ne se passionna guère pour les licornes" altogether. In this, he is probably following Shepard's characterisation of the eighteenth century as "not a good time for unicorns" (*Lore of the Unicorn*, 203).

4. *Catalogue des collections de dessins et estampes, d'histoire naturelle, de coquilles et machines de Monsieur l'Abbé de Fleury, Chanoine de l'Église de Paris, Dont la Vente commencera le 4 Mars 1756* (Paris, 1756), 60.

5. A good summary of early modern writing on the unicorn is in Baron Franz Xaver von Zach, "Note," in id., *Correspondance astronomique, geographique, hydrographique et statistique*, XI (Genoa, 1824), 274–83. See also Roger Ariew, "Leibniz on the Unicorn and Various Other Curiosities," *Early Science and Medicine* 3, no. 4 (1998): 267–88.

6. For similar calls for attention to the material culture of collections, see Yves Laissus, "Les cabinets d'histoire naturelle," in *Enseignement et diffusion des sciences en France au XVIIIe siècle*, ed. René Taton (Paris, 1986), 342–84; Giuseppe Olmi, *Inventario del mondo: catalogazione della natura et luoghi del sapere nella prima età moderna* (Bologna, Italy, 1992); Krzysztof Pomian, *Collectionneurs, amateurs et curieux: Paris, Venise, XVIe—XVIIIe siècle* (Paris, 1987); Arthur MacGregor, *Curiosity and Enlightenment: Collectors and Collections from the Sixteenth to the Nineteenth Centuries* (New Haven, CT, 2007).

7. Antoine Furetière and Henri Basnage de Beauval, *Dictionnaire Universel, Contenant generalement tous les Mots François, tant vieux que modernes, & les Termes des Sciences et des Arts*, 2nd ed. (La Haye, France, 1701), I: "Licorne"; II: "Narwal": "Gros poisson qu'on

trouve dans les mers d'Islande, qui porte en sa partie anterieure une longue corne, que plusieurs croyent être ce que l'on appelle corne de licorne" (my emphasis).

8. Pierre Pomet, *Histoire generale des Drogues, traitant des Plantes, des Animaux, & des Minéraux* (Paris, 1694), 9–10.

9. On Lobo, see Shepard, *Lore of the Unicorn*, 199–201; on his ties to Toinard, *Journal des Sçavans*, August 28, 1719, 548. As Roling, "Der Wal als Schauobjekt" notes, scepticism over the unicorn and news of the existence of the narwhal were common scholarly themes in the course of the seventeenth century, but the debate remained unresolved. No one specimen of narwhal horn could settle it, particularly in the absence of agreement about what constituted a "typical" horn.

10. Quoted in *Journal des Sçavans*, August 28, 1719, 548, review of *Anciennes relations des Indes et de la Chine, de deux Voyageurs Mahometans qui y allerent dans le neuviéme siecle; traduites d'Arabe: avec des Remarques sur les principaux endroits de ces Relations* (Paris, 1718): "La Licorne est beaucoup plus petite que l'Elephant; depuis le col jusqu'en bas, elle ressemble assez au Bufle; elle est d'une force extraordinaire, & qui surpasse celle de tous les autres animaux; elle n'a point la corne fenduë aux pieds de derriere ni à ceux de devant, qui sont tous d'une piece, *jusqu'aux épaules*. Les Elephans fuyent devant la Licorne; son mugissement est presque semblable à celuy du Boeuf, & tient quelque chose du cri du Chameau."

11. *Journal des Sçavans*, August 28, 1719, 548: "les productions de la nature, ses merveilles, les moeurs des differens peuple, & le Commerce qu'on peut faire avec eux."

12. Anonymous, *Les Fables d'Esope, gravées par Sadeler, avec un Discours préliminaire & les Sens Moraux en Distiques* (Paris, 1743), 293. This author named as another of his sources a voyage to Abyssinia, attributing this to Père Jean-Baptiste Labat; in fact the book he had been reading was almost certainly a recent French translation of a work by the same Portuguese Jesuit who had told Toinard about his attempts to rear a unicorn foal: Jerome Lobo's *Relation historique d'Abissinie* (Paris, 1728), 69–70, 230–31. The de Seignelay mentioned may have been Colbert's grandson, Marie-Jean-Baptiste Colbert de Seignelay, who had died in 1712, or else his son and successor as minister and statesman Jean-Baptiste Colbert de Seignelay, who died in 1690 (Louis Moréri, *Le Grand Dictionnaire Historique ou le Mélange Curieux de l'Histoire Sacrée et Profane*, III [Paris, 1725], 266).

13. "The new Baconian natural history was to be compiled with religious care, as if every particular were stated upon an oath." Barbara Shapiro, *A Culture of Fact: England, 1550–1720* (Ithaca, NY, 2000), 108. As Harriet Ritvo, *The Platypus and the Mermaid, and Other Figments of the Classifying Imagination* (Cambridge, MA, 1997), 176–78, notes, biblical references also gave unicorns "theological legitimacy" well into the nineteenth century.

14. The perplexity of new natural worlds has been extensively discussed for earlier centuries. See, for example, Antonello Gerbi, *Nature in the New World: From Christopher Columbus to Gonzalo Fernández de Oviedo* (Pittsburgh, PA, 1985); Stephen Greenblatt, *Marvelous Possessions: The Wonder of the New World* (Oxford, 1992); Anthony Grafton, April Shelford, and Nancy Siraisi, *New Worlds, Ancient Texts: The Power of Tradition and the Shock of Discovery* (Cambridge, MA, 1995); Joan-Pau Rubiés, *Travellers and Cosmographers: Studies in the History of Early Modern Travel and Ethnography* (Aldershot, UK, 2007); Dániel Margocsy, "The Camel's Head: Representing Unseen Animals in Sixteenth-Century Europe," *Netherlands Yearbook of Art History* 61 (2011): 63–85. It remained a live issue well into the nineteenth century, although only a few scholars have addressed the eighteenth-century situation, in particular Markman Ellis, "'That Singular and Wonderful Quadruped': The Kangaroo as Historical Intangible Natural Heritage in the Eighteenth Century," in *Intangible Natural Heritage: New Perspectives on Natural Objects*, ed. Eric Dorfman (New York, 2011), 56–87. Dana Jalobeanu, *The Art of*

Experimental Natural History: Francis Bacon in Context (Bucharest, 2015), esp. chapter 1, has argued, however, that such a view of "Baconian" natural history as an encyclopædic project of "filling in the gaps" in natural historical knowledge is in large part a construction of Bacon's readers, rather than his own position.

15. Nicolas Lémery, *Traité Universel des Drogues Simples, mises en Ordre alphabétique. Où l"on trouve leurs differens noms, leur origine, leur choix, les principes qu'elles renferment, leurs qualitez, leur ethymologie, & tout ce qu'il y a de particulier dans les Animaux, dans les Vegetaux & dans les Mineraux* (Paris, 1698): "Narwal," 525–56: "autrefois très-rare, & gardée dans les cabinets des Curieux, comme une des choses du monde les plus prétieuses, témoin celle qu'on voit dans le Trésor de Saint Denis en France. La raison de cette rareté venoit de ce qu'on ne connoissoit point encore le Narwal; mais depuis qu'on a péché beaucoup de ces poissons, cette corne n'est plus guéres rare, on en trouve chez plusieurs Marchands coupées par tronçons; elle contient beaucoup de sel volatil & d'huile." According to Faidotti, "Images et connaissance de la licorne," I, 305–17, legend had it that the Saint-Denis horn was given to Charlemagne by an "Oriental potentate." On the horn's rarity during the Renaissance, see Faidotti, "Images et connaissance de la licorne," I, 308. On early modern medical chymistry, see, in particular, Laurence M. Principe, ed., *Chymists and Chymistry: Studies in the History of Alchemy and Early Modern Chemistry* (Sagamore Beach, 2007).

16. "Narwhal," Wikipedia, accessed September 28, 2016, https://en.wikipedia.org/wiki/Narwhal.

17. Richard Vaughan, "Whaling in Davis Strait and Baffin Bay during the 18th and 19th Centuries," *Polar Record* 23, no. 144 (1986): 289–99, 292–93. Philippe Henrat, "French Naval Operations in Spitsbergen During Louis XIV's Reign," *Arctic* 37, no. 4 (1984): 544–51, claims the French had little role in whaling themselves after around 1704.

18. Whaling continued until the eradication of the bowhead whale in the waters around Spitsbergen in the nineteenth century. Allen and Keay argue that government support played an important role in this and that it was the sharp expansion in British whaling after 1751, that is, just at the time the collections under discussions were being formed, that led to the collapse in populations. See Robert C. Allen and Ian Keay, "The First Great Whale Extinction: The End of the Bowhead Whale in the Eastern Arctic," *Explorations in Economic History* 38 (2001): 448–77; Chesley W. Sanger, "The Role of Foreign Experts in the Revival of Scottish Northern Whaling: 1750–1784," *The Mariner's Mirror* 96, no. 3 (2010): 295–302, 296; Louwrens Hacquebord, "Three Centuries of Whaling and Walrus Hunting in Svalbard and Its Impact on the Ecosystem," *Environment and History* 7, no. 2 (2001): 169–85; Marloes Rijkelijkhuizen, "Whales, Walruses, and Elephants: Artisans in Ivory, Baleen, and Other Skeletal Materials in Seventeenth- and Eighteenth-Century Amsterdam," *International Journal of Historical Archaeology* 13 (2009): 409–29, 411–12.

19. Lémery, *Traité Universel des Drogues Simples*, 502, "Monoceros": "un grand animal à quatre pieds, semblables à un cheval, portant sur le haut de son front une corne droite, tortillée en spirale, longue de deux ou trois pieds, pointue, laquelle lui sert de défense: mais cet animal ne se trouve point, & aucun de ceux qui en ont écrit, ne dit l'avoir vû; on n'a pas même désigné les lieux où il naît: il est vray qu'on nous apporte une corne blanche ressemblant à l'yvoire, fort dure, pesante, ayant jusqu'à deux aunes de longueur, tortillée, creuse en dedans, laquelle on appelle *Unicornu*, & dont on se sert en Médecine; mais cette corne naît à un grand poisson nommé par les Islandois *Narvval*, comme je le dirai en son lieu en parlant de ce poisson."

20. As Faidotti, "Images et connaissance de la licorne," I: 181, shows that the horn's reputation as an antidote was well established in sixteenth-century writings; see also Faidotti, "Images et connaissance de la licorne," I, chapter 1.4, especially 324–27; Shepard, *Lore of*

the Unicorn, Chapter 5. Robert Collis, "Magic, Medicine and Authority in Mid-Seventeenth-Century Muscovy: Andreas Engelhardt (d. 1683) and the Role of the Western Physician at the Court of Tsar Aleksei Mikhailovitch, 1656–1666," *Russian History* 40, no. 3–4 (2013): 399–427; and Roling, "Der Wal als Schauobjekt," discuss mid-seventeenth century trials of the horn's efficacy. On its medicinal uses in the seventeenth and eighteenth centuries, see especially Louis-Paul Fischer and Véronique Cossu Ferra Fischer, "La Licorne et la corne de licorne chez les apothicaires et les médecins," *Histoire des Sciences Médicales* 45, no. 3 (2011): 265–74; Clare Griffin, "Bureaucracy and Knowledge Creation: The Apothecary Chancery," in *Information and Empire: Mechanisms of Communication in Russia 1600–1850*, ed. Simon Franklin and Katherine Bowers (Cambridge, 2017), chapter 8; William Jackson, "The Use of Unicorn Horn in Medicine," *The Pharmaceutical Journal* 273 (December 18, 2004). From 1664 onward, it was taxed at the high rate of two *livres* and ten *sous* per pound (Dufréne de Francheville, *Histoire generale et particuliere des Finances, où l'on voit l'Origine, l'Etablissement, la Perception & la Régie de toutes les Impositions* [Paris, 1738], I: 289). As both Roling and Schnapper, *Le Géant, la licorne et la tulipe*, 93, note, identifying unicorn with narwhal horn in the seventeenth century did not mean rejecting its medicinal value out of hand. In contrast to ivory, however, narwhal tusk was rarely used for working into other objects (Arthur MacGregor, *Bone, Antler, Ivory and Horn: The Technology of Skeletal Materials Since the Roman Period* [London, 1985], 41, 43n).

21. Fischer and Fischer, "La Licorne," 272.

22. On the biography of things, classic studies are: Igor Kopytoff, "The Cultural Biography of Things: Commoditization as Process," in *The Social Life of Things: Commodities in Cultural Perspective*, ed. Arjun Appadurai (Cambridge, 1988), 64–90; Chris Gosden and Yvonne Marshall, "The Cultural Biography of Objects," *World Archaeology* 31 (1999): 169–78. The genre of "object biographies," central to museology, archaeology, and anthropology, has proceeded at one remove from the study of "epistemic things." See, for example, Hans-Jörg Rheinberger, *Toward a History of Epistemic Things: Synthesizing Proteins in the Test-Tube* (Stanford, CA, 1997); Karin Knorr-Cetina, "Objectual Practice," in *The Practice Turn in Contemporary Theory*, ed. Theodore Schatzki and Elke von Savigny (London, 2001), 184–97; Lorraine Daston, ed., *Biographies of Scientific Objects* (Chicago, 2000). The elision of these two categories for the case of natural history is one which has still not received adequate attention, but see the interesting reflections in Elizabeth Edwards, Chris Gosden, and Ruth B. Phillips, eds., *Sensible Objects: Colonialism, Museums and Material Culture* (Oxford, 2006), introduction.

23. These figures are based on a preliminary breakdown of cabinet descriptions in Antoine-Joseph Dezallier d'Argenville, *La Conchyliologie, ou Histoire naturelle des coquilles de mer, d'eau douce, terrestres et fossiles, avec un traité de la zoomorphose, ou représentation des animaux qui les habitent*, 3rd ed., 3 vols. (Paris, 1780), chapter 10. A future project will involve the detailed analysis of over one hundred auction catalogues.

24. On preservation and display practices in general, see MacGregor, *Curiosity and Enlightenment*, 143–48; P. A. Morris, *A History of Taxidermy: Art, Science and Bad Taste* (Ascot, UK, 2010); Karen Wonders, *Habitat Dioramas: Illusions of Wilderness in Museums of Natural History* (Uppsala, Sweden, 1993); *Stuffing Birds, Pressing Plants, Shaping Knowledge: Natural History in North America, 1730–1860*, special issue of *Transactions of the American Philosophical Society*, new series, 93, no. 4 (2003). On arsenical soap, see L. C. Rookmaaker et al., "The Ornithological Cabinet of Jean-Baptiste Bécoeur and the Secret of the Arsenical Soap," *Archives of Natural History* 33 (2006): 140–45; Paul Dorveaux, "Bécoeur, apothicaire à Metz et taxidermiste," *Bulletin de la Société d'histoire de la pharmacie* 11, nos. 39 (1923): 225–37 and 40 (1923): 277–90; Rachel Poliquin, *The Breathless Zoo: Taxidermy and the Cultures of Longing* (University Park, PA, 2012), 25–32;

Paul Farber, "The Development of Taxidermy and the History of Ornithology," *Isis* 68, no. 4 (1977): 550–66. On the difficulty of preserving whales for collections, see Michelle Henning, "Neurath's Whale" and Richard Sabin, "The Thames Whale: The Difficult Birth of a Celebrity Specimen," both in *The Afterlives of Animals: A Museum Menagerie*, ed. Samuel J. M. M. Alberti (Charlottesville, VA, 2011), 151–68, 186–201.

25. Lémery, *Traité Universel des Drogues Simples*, 525; Faidotti, "Images et connaissance de la licorne," I, 70; Shepard, *Lore of the Unicorn*, chapter 8.

26. Poliquin, *Breathless Zoo*, 35, from Nehemiah Grew's *Musœum Regalis Societatis, or a Catalogue & Description of the Natural and Artificial Rarities Belonging to the Royal Society and Preserved at Gresham Colledge . . . Whereunto Is Subjoyned the Comparative Anatomy of Stomachs and Guts* (London, 1681). Just six live rhinoceros reached Europe in the whole of the eighteenth century; see Kees Rookmaaker, John Gannon, and Jim Monson, "The Lives of Three Rhinoceroses Exhibited in London 1790–1814," *Archives of Natural History* 42, no. 2 (2015): 279–300, 279. Not until the 1740s were images and descriptions of a rhino which arrived in London in 1739 circulated widely through the Republic of Letters. Arriving in Paris, it was drawn and painted by the artist Jean-Baptiste Oudry, and engraved for Buffon and Daubenton's *Histoire Naturelle, Générale et Particulière*, XI (1764), plate 7. See L. C. Rookmaaker, *The Rhinoceros in Captivity* (The Hague, 1998), 65; T. H. Clarke, *The Rhinoceros from Dürer to Stubbs, 1515–1799* (London, 1986), 43–68. Actual specimens were far rarer. The only surviving full rhino specimen from the eighteenth century dates from 1793: Morris, *A History of Taxidermy*, 20. Pedro Davila owned a rhino tail section, but a double horn fetched a great deal more at auction: *Catalogue systématique et raisonné des Curiosités de la Nature et de l'Art, qui composent le Cabinet de M. Davila, avec Figures en taille douce, de plusieurs morceaux qui n'avoient point encore été gravés*, 2 vols. (Paris, 1767), I, 493–94.

27. Fabian Krämer, *Ein Zentaur in London. Lektüre und Beobachtung in der frühneuzeitlichen Naturforschung* (Affalterbach, Germany, 2014), 304–19; Margócsy, "The Camel's Head." Precisely because problems of scarcity, uncertainty, and material absence afflicted so many species, however, Krämer's reflections on the effects of the new culture of scepticism emerging in eighteenth century natural history upon the credibility of things like centaurs still demand detailed application to the case of animals that we now hold to be real, as the fate of the gnu, discussed below, makes clear. A critical early modern naturalist would have had to be critical about a great many more of the animal specimens in her or his cabinet than these few.

28. Harry Collins proposes that with novel phenomena, belief or "incredibility is a social product." He goes on—suggestively for my own argument—to argue that, in cases where the phenomenon is allowed to dictate the outcome of the debate, "the incredibility of the discredited phenomenon . . . will seem so natural as not to require an explanation at all." See Harry Collins, "'Son of Seven Sexes,' The Social Destruction of a Physical Phenomenon," *Social Studies of Science* 11, no. 1 (1981): 33–62, 34, especially 34 and 54.

29. S. Peter Dance, *Animal Fakes and Frauds* (Maidenhead, UK, 1976).

30. A particular problem was that unicorns could no longer readily be associated with the category of the monstrous, since they merely counted as rare, rather than abnormal. Krämer, *Ein Zentaur in London*, 328–43, discusses the German naturalist Albrecht von Haller's struggles to define what should properly count as "monstrous." The rise of anatomical investigation in Paris around 1700 has been studied by Anita Guerrini: "Duverney's Skeletons," *Isis* 94, no. 4 (2003): 577–603, and *The Courtiers' Anatomists: Animals and Humans in Louis XIV's Paris* (Chicago, 2015).

31. Édme-François Gersaint, *Catalogue raisonné d'une Collection considerable de diverses curiosités en tous Genres, contenuës dans les Cabinets de feu Monsieur Bonnier de La Mosson,*

Bailly & Capitaine des Chasses de la Varenne des Thuilleries & ancien Colonel du Regiment Dauphin (Paris, 1744), 74: "Une des plus belles & des plus grandes Cornes de Narwal que l'on puisse trouver . . . attachée au bout du musle d'une tête de Narwal très-bien sculptée en bois, & faite telle que l'on dépeint cet animal"; "Une aussi belle Corne de Licorne ou de Narwal, que la précédente . . . attachée . . . sur une tête très-proprement sculptée, & telle que l'on dépeint celle d'une Licorne."

32. Gersaint, *Catalogue raisonné*, 74n: "Il y a déja du tems que l'on est désabusé de l'erreur dans laquelle on étoit, que cette corne étoit une défense posée sur la tête d'un animal appellé Licorne. Comme il ne s'est trouvé que des Auteurs suspects qui en ayent parlé, sans même avoir pû dire qu'ils en avoient vû, ni le lieu de leur naissance; on a reconnu que ce n'étoit qu'un être imaginaire, autorisé simplement par des oüi-dire & des rapports mal-fondez, & sans preuve; & l'on a enfin découvert par la suite que cette corne étoit la défense dont étoit armé un certain gros Poisson appellé Narwal, qui s'en sert pour attaquer ou pour se défendre contre les plus grosses Baleines, & qui se trouve communément dans la Mer du Nord vers les Côtes d'Islande & de Groenlande."

33. Katie Scott, *The Rococo Interior* (New Haven, CT, 1995), 171–72.

34. On these spatial conversations, see Bleichmar, "Seeing the World," 30; Aleksander Pluskowski, "Narwhals or Unicorns? Exotic Animals as Material Culture in Medieval Europe," *European Journal of Archaeology* 7, no. 3 (2004): 291–313. A very similar gambit was attempted in iconic form by Michael Bernhard Valentini in a plate included in his 1704 *Museum Museorum*. See Faidotti, "Images et connaissance de la licorne," I, 12.

35. Here I deploy the expression differently from the sense in which it was used by Susan Leigh Star and James R. Griesemer ("Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907–39," *Social Studies of Science* 19 [1989]: 387–420) and by others such as Charlotte P. Lee, "Boundary Negotiating Artifacts: Unbinding the Routine of Boundary Objects and Embracing Chaos in Collaborative Work," *Computer Supported Cooperative Work* 16, no. 3 (2007): 307–39; Chris Kimble, Corinne Grenier and Karine Goglio-Primard, "Innovation and Knowledge Sharing across Professional Boundaries: Political Interplay between Boundary Objects and Brokers," *International Journal of Information Management* 30 (2010): 437–44. So far from being objects amenable to standardization or around which consensus could form, unicorn horns were almost the opposite, resisting agreement and classification. They were in essence objects always *on* the boundary between classificatory categories but, for this reason, prompted exchange and the articulation of underlying priorities *in re* natural order in the same way as scientific controversies; for a classic study, see Martin Rudwick, *The Great Devonian Controversy: The Shaping of Scientific Knowledge Among Gentlemanly Specialists* (Chicago, 1985). Nevertheless, to the extent that unicorn horns are "an object that lives in multiple social worlds and which has different identities in each," Star and Griesemer's original formulation in "Institutional Ecology," 409, is applicable. Daniela Bleichmar, "Seeing the World in a Room: Looking at Exotica in Early Modern Collections," in *Collecting Across Cultures: Material Exchanges in the Early Modern Atlantic World*, ed. Daniela Bleichmar and Peter C. Mancall (Philadelphia, PA, 2011), 20, highlights the polyvalence of specimens in just this way: "the slipperiness of early modern collectibles originated . . . in the possible responses available to viewers."

36. For recent reflections on this, see Adriana Craciun and Simon Schaffer, eds., *The Material Cultures of Enlightenment Arts and Sciences* (London, 2016), especially the introduction.

37. Henning, "Neurath's Whale," 157, explains that "the properties [the museum visitor] perceives as belonging to it are not simply 'in' the object but in its relation to her."

38. Paula Findlen, "Jokes of Nature and Jokes of Knowledge: The Playfulness of Scientific Discourse in Early Modern Europe," *Renaissance Quarterly* 43, no. 2 (1990): 292–331, 318–19.

39. Celina Fox, *The Arts of Industry in the Age of Enlightenment* (New Haven, CT, 2009); Michael R. Lynn, *Popular Science and Public Opinion in Eighteenth-Century France* (Manchester, UK, 2006); Bernadette Bensaude-Vincent and Christine Blondel, eds., *Science and Spectacle in the European Enlightenment* (Aldershot, UK, 2007); John L. Heilbron, *Electricity in the Seventeenth and Eighteenth Centuries: A Study of Early Modern Physics* (Berkeley, CA, 1979).

40. On how artistic interventions could confer new meanings upon the narwhal or rhinoceros horn, see Pluskowski, "Narwhals or Unicorns?"; Bleichmar, "Seeing the World," 20. On specimens as "designed objects," see Henning, "Neurath's Whale," 159; Peter Mason, "From Presentation to Representation: *Americana* in Europe," *Journal of the History of Collections* 6, no. 1 (1994): 1–20, 5–6.

41. Only a few studies have addressed the auction catalogues seriously; see my more extended discussion in "The Naturalist Collecting Community in Paris, 1760–1789: A Preliminary Survey," *Acta Historica Leopoldina* 7 (2017): 1–26; also, in particular, Bettina Dietz, "Mobile Objects: The Space of Shells in Eighteenth-Century France," *British Journal for the History of Science* 39, no. 3 (2006): 363–82; Bettina Dietz and Thomas Nutz, "*Collections Curieuses*: The Aesthetics of Curiosity and Élite Lifestyle in Eighteenth-Century Paris," *Eighteenth-Century Life* 29, no. 3 (2005): 44–75; Daniela Bleichmar, "Learning to Look: Visual Expertise across Art and Science in Eighteenth-Century France," *Eighteenth-Century Studies* 46, no. 1 (2012): 85–111, 96–104; Yves Laissus, "Les Cabinets d'histoire naturelle," in *Enseignement et diffusion des sciences en France au dix-huitième siècle*, ed. René Taton (Paris, 1986), 659–70.

42. *Catalogue systématique et raisonné des Curiosités de la Nature et de l'Art*, "Avertissement de M. Davila," iii–vi, and "Préface," vi–x. On Davila, see Eduardo Martinez de la Vega, "Don Pedro Franco Davila," *Revista de Historia de América* 102 (1986): 125–41; David Goodman, "Science, Medicine, and Technology in Colonial Spanish America: New Interpretations, New Approaches," in Daniela Bleichmar et al., eds., *Science in the Spanish and Portuguese Empires, 1500–1800* (Stanford, CA, 2009), 9–34, 24; Helen Cowie, "Sloth Bones and Anteater Tongues: Collecting American Nature in the Hispanic World (1750–1808)," *Atlantic Studies* 8 (2011): 5–27; Bleichmar, "Learning to Look."

43. On classification as social and ethical praxis, see especially Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out: Classification and Its Consequences* (Cambridge, MA, 1999).

44. *Catalogue systématique et raisonné des Curiosités de la Nature et de l'Art*, 476. Schnapper, *Le Géant, la licorne et la tulipe*, 86, notes that basilisks outlasted other emblematic animals in the early modern French collection.

45. Schnapper, *Le Géant, la licorne et la tulipe*, 92–3, finds this competitiveness going on in late seventeenth-century collections. Unicorn horns had aphrodisiac properties (Brian Fotheringham, "The Unicorn and its Influence on Pharmacy and Medicine," *Pharmacy History Australia* 10 (2000) 3–7).

46. *Catalogue systématique et raisonné des Curiosités de la Nature et de l'Art*, 476: marginal annotation on the copy held at the Bibliothèque de l'Institut National d'Histoire de l'Art, accessed September 27, 2016, http://tools.yoolib.com/Yviewer/index.php?user=inha&filemedia_id=14272&fullscreen=1&current_image_id=0&dbk=&menu_left_visible=1&menu_left_type=thumbnail. However, this was about half the price of a good mineral or shell specimen and an order of magnitude lower than the highest-priced shells

(S. Peter Dance, *A History of Shell Collecting* (Leiden, Netherlands, 1986); Dietz, "Mobile Objects").

47. *Catalogue d'une Collection de Minéraux, Crystallisations, Pierres fines, Pierres gravées, Agates arborisées & autres; Coquilles univalves & bivavles, Coraux, Madrépores, Papillons, Oiseaux, Armes anciennes & modernes, Morceaux curieux en or & en argent, & autres Objets agréables & intéressants* (Paris, 1773), 70:

> 755 Une tête de bouquetin.
>
> 756 Une tête de bouquetin, & celle d'un condamar.
>
> 757 Une tête de marsouin, & une corne de rhinocéros.
>
> 758 Une corne du poisson narwal, de 7 pieds 10 pouces de longueur.
>
> 759 Une autre corne d'un pareil poisson, de 6 pieds 8 pouces de longueur.
>
> 760 Autre de 5 pieds 4 pouces.
>
> 761 Un priape de baleine de 6 pieds de long, & les vertebres d'un poisson ou d'un serpent.
>
> 762 Un caméléon & une tête de perdrix dont le bec est singulier, dans une case de verre; un grand lézard goîtreux de Cayenne.

48. As Rookmaaker et al., "Lives of Three Rhinoceroses," 282, 287, shows, a rhino exhibited in London was advertised in a 1795 broadside as "The Young Rhinoceros or real Unicorn."

49. Oded Rabinovitch, "Chameleons between Science and Literature: Observation, Writing, and the Early Parisian Academy of Sciences in the Literary Field," *History of Science* 51, no. 1 (2013): 33–62.

50. For example in Davila's *Catalogue systématique et raisonné des Curiosités de la Nature et de l'Art*, 499, as well as in *Catalogue raisonné des curiosités qui composoient le cabinet de feu [sic] Mme Dubois-Jourdain* (Paris, 1766), 63–65; *Catalogue d'une Collection de belles Coquilles, Coraux, Madrépores, Cristallisations, Incrustations, Morceaux & Plaques d'Agate Orientale & autres; des Jaspes, des Cornalines, des Minéraux, des Pétrifications, des Marbres, des Bronzes Indiens, des Porcelaines, des Médailles & Monnoies d'Or, d'Argent et de Bronze, & autres Objets curieux; composant le Cabinet de feu Monsieur le Marquis de Bausset, Ministre Plénipotentiaire de Sa Majesté, auprès de l'Impératrice des Russies* (Paris, 1768), 40.

51. In this sense, the material history of the collection suggests that the "naturalising of the monstrous" envisaged by Lorraine Daston and Katharine Park in "Unnatural Conceptions: The Study of Monsters in Sixteenth- and Seventeenth-Century England," *Past and Present* 92 (1981): 20–54 as occurring in the eighteenth century might not have been so clear cut.

52. Anke te Heesen, *The World in a Box: The Story of an Eighteenth-Century Picture Encyclopedia* (Chicago, 2002); see also, in particular, Didier Maleuvre, *Museum Memories: History, Technology, Art* (Stanford, CA, 1999).

53. On this transformation, classic studies are: Richard Burkhardt, *The Spirit of System: Lamarck and Evolutionary Biology* (Cambridge, MA, 1977), Dorinda Outram, *Georges Cuvier: Vocation, Science and Authority in Post-Revolutionary France* (Manchester, UK, 1984); Toby A. Appel, *The Cuvier-Geoffroy Debate: French Biology in the Decades before Darwin* (New York, 1987); Pietro Corsi, *The Age of Lamarck: Evolutionary Theories in France 1790–1830* (Berkeley, 1988).

54. Poliquin, *Breathless Zoo*, especially 83–132; Maleuvre, *Museum Memories*, 213–18.

55. Here the horn perfectly fits Knorr-Cetina's definition of "partial objects" as "things that continually 'explode' and 'mutate' into something else"; see Knorr-Cetina, "Objectual Practice," 191. On the problems of cetacean classification in general, see Ritvo, *The Platypus and the Mermaid*, 46–50.

56. Georges-Louis Leclerc de Buffon et al., *Histoire naturelle, générale et particulière, Histoire naturelle des Minéraux*, IV: Paris: Imprimerie Royale, 1786, 145, 149, 158; ibid., *Supplément*, V: Paris: Imprimerie Royale, 1778, 179. Nevertheless, Buffon's central place in the Enlightenment pantheon leads Michel Pastoureau and Élisabeth Delahaye, *Les Secrets de la licorne* (Paris, 2013), 125, to claim that he identified the unicorn as a narwhal.

57. Londa Schiebinger, "Why Mammals Are Called Mammals: Gender Politics in Eighteenth-Century Natural History," *American Historical Review* 98, no. 2 (1993): 382–411. The classic account of the clash between these two most famous naturalists of eighteenth-century Europe remains Phillip R. Sloan's "The Buffon-Linnaeus Controversy," *Isis* 67 (1976): 356–75.

58. *The Naturalist's Library*, VI: *On the Ordinary Cetacea or Whales* (Edinburgh, 1837), 17; see also Bernard Quilliet, *Lacépède. Savant, musicien, philanthrope et franc-maçon* (Paris, 2013), part II, chapter 4. As Felix Lüttge, "Weniger schlechte Bilder. Walfängerwissen in Naturgeschichte, Ozeanographie und Literatur im 19. Jahrhundert," *Berichte zur Wissenschaftsgeschichte* 39, no. 2 (2016): 127–42, 137–8, points out, however, whales still caused "classificatory delirium" at this time.

59. Bernard-Germain-Étienne de La Ville-sur-Ollon, comte de Lacepède, *Histoire Naturelle des Cétacées, dédiée a Anne-Caroline La Cepède* (Paris, an XII), 142–46.

60. L. C. Rookmaaker, *The Zoological Exploration of Southern Africa 1650–1790* (Rotterdam, Netherlands, 1989), 123–28. Allamand produced an edition of the *Histoire Naturelle* with many additions and annotations, often derived from his access to collectors like Gordon and Forster. He noted that "knowledge of the true shape of the rhinoceros" was also down to a drawing Gordon had sent him from the Cape of Good Hope.

61. *Histoire naturelle, générale et particulière*, *Supplément*, VI (Paris, 1782), 94, "point un animal chimérique, mais un véritable animal, dont la race étoit très-nombreuse en Afrique." On the role of the VOC and Gordon, in particular, as sources of information on African natural history in this period, see especially Siegfried Huigen, "Introduction," in Siegfried Huigen, Jan L. de Jong and Elmer Kolfin, eds., *The Dutch Trading Companies as Knowledge Networks* (Leiden, Netherlands, 2010), 1–18; Rookmaaker, *Zoological Exploration of Southern Africa*, chapter 7. Patrick Cullinan, *Robert Jacob Gordon 1743–1795: The Man and his Travels at the Cape* (Cape Town, 1992), 22, 35–36, 113, shows Gordon's journals of his travels were long unpublished. For actual sightings of unicorns in Africa, see Roling, "Der Wal als Schauobjekt," 192.

62. *Histoire naturelle*, *Supplément*, VI, 94: "Il est étonnant qu'un animal aussi gros & aussi singulier que celui-ci, & qui vraisemblablement se trouve dans les lieux où les Européens ont pénétré, ait été inconnu jusqu'à présent."

63. *Histoire naturelle*, *Supplément*, VI, 99: "Il constitue une espèce très-singulière, qui réunit en soi la force de la tête & des cornes du taureau, la légèreté & le pelage du cerf; & la beauté de la crinière, du corps & de la queue du cheval. Avec le temps, ne parviendra-t-on point à connoitre aussi la licorne, qu'on dit habiter les mêmes contrées, que la plupart des Auteurs regardent comme un animal fabuleux, tandis que d'autres assurent en avoir vu, & même en avoir pris des jeunes."

64. *Histoire naturelle*, IX, 241: "des sphynx, des pégases, des licornes et des autres prodiges ou monstres qu'enfante l'Éthiopie;" *Supplément*, VI, 99: "rien à ajouter, ni à retrancher à cette bonne description, ni aux très-judicieuses réflexions du savant M. Allamand."

65. On this issue, see Natalie Lawrence, "Assembling the Dodo in Early Modern Natural History," *British Journal for the History of Science* 48, no. 3 (2015): 387–408; Poliquin, *Breathless Zoo*, 13–14; Ritvo, *The Platypus and the Mermaid*, chapter 4; also my "Codes of Passion: Natural History Specimens as a Polite Language in Late Eighteenth-Century France," in *Wissenschaft als kulturelle Praxis, 1750–1900*, ed. P. H. Reill and J. Schlumbohm (Göttingen, Germany, 1999), 105–35. On the complexities of modern taxidermic techniques, see Morris, *History of Taxidermy*; Merle Patchett, "The Taxidermist's Apprentice: Stitching Together the Past and Present of a Craft Practice," *Cultural Geographies* 23, no. 3 (2016): 401–19. As both Krämer, *Ein Zentaur in London*, 16, and Ann Blair, "Humanist Methods in Natural Philosophy: The Commonplace Book," *Journal of the History of Ideas* 53 (1992): 541–51, argue, the textual construction of the specimen functioned in very similar ways.

66. Maleuvre, *Museum Memory*, 220ff.

67. On the revival of natural historical interest in the unicorn generated by travel accounts of the African interior in the decade 1781–1790, see Shepard, *Lore of the Unicorn*, 203–9. Shepard insightfully links this development to the creation of an African imaginary as a by-product of colonialism.

68. *Nachrichten von Island, Grönland und der Straße Davis, zum wahren Nutzen der Wissenschaften und der Handlung* (Hamburg, Germany, 1746), 201–4. For his articles in the Encyclopédie on "Baleine" (II: 33), "Cetacée" (II: 870) and "Narwal" (XI: 30–31), Buffon's coauthor Louis-Jean-Marie Daubenton relied almost entirely upon Anderson's account, as did Arnault de Nobleville and François Salerne in their *Histoire naturelle des animaux* II.1 (Paris, 1756), 139–43. On Hamburg whaling, see Klaus Friedland, "The Hanseatic League and Hanse Towns in the Early Penetration of the North," *Arctic* 37, no. 4 (1984): 539–43, 542–43.

69. Anderson, *Nachrichten*, 203.

70. Craig Clunas, *Pictures and Visuality in Early Modern China* (London, 1997); an even more apposite use of this phrase for current purposes is developed by Benjamin Schmidt, *Inventing Exoticism: Geography, Globalism, and Europe's Early Modern World* (Philadelphia, PA, 2015), 294ff.

71. Kärin Nickelsen, *Draughtsmen, Botanists and Nature: The Construction of Eighteenth-Century Botanical Illustrations* (Dordrecht, Netherlands, 2006), chapter 1. On the difficulty of even observing whales in the first place and the development of standardized visual descriptions over the early nineteenth century, see Lüttge, "Weniger schlechte Bilder." Whale hunters targeted the bowhead and right whale, so catching a narwhal was a rare event (Rijkelijkhuizen, "Whales, Walruses, and Elephants," 410).

72. In this, it probably borrowed from Thomas Bartholin's book *De unicornu observationes novæ*, originally published in 1645 (Amsterdam, 1678), 121, a work well known in the Germanic learned world, which contained a similar image showing part of the narwhal's skull.

73. "Narwalschaedel.jpg," Wikimedia Commons, accessed September 25, 2016, https://commons.wikimedia.org/wiki/File:Narwalschaedel.jpg.

74. "Was macht ein Weibchen mit zwei Geweihen?" *Welt*, August 31, 2015, accessed September 29, 2016, https://www.welt.de/regionales/hamburg/article145829740/Was-macht-ein-Weibchen-mit-zwei-Geweihen.html.

75. See, for example, Bruno Latour, *We Have Never Been Modern* (Cambridge, MA, 1993), 12: "Can we aspire to Enlightenment without modernity? My hypothesis . . . is that we are going to have to slow down, reorient and regulate the proliferation of monsters by representing their existence officially." Also, Latour, *An Inquiry into Modes of Existence: An Anthropology of the Moderns*, trans. Catherine Porter (Cambridge, MA, and London, 2013), 28; Natalie Lawrence, "Making Monsters," in *Worlds of Natural History*, ed. H. A. Curry et al. (Cambridge, 2019), chapter 6. As Maleuvre, *Museum Memories*, 229, eloquently puts it, the specimen is "a tool that behaves so much in accordance with the subject's intention that it becomes a subject itself." For a study suggesting that the creation of "Enlightened" knowledge always generated objects that breached the boundaries of rationality, see Peter J. Bräunlein, "The Frightening Borderlands of Enlightenment: The Vampire Problem," *Studies in History and Philosophy of Biological and Biomedical Sciences*, 43, no. 3 (2012): 710–19.