

# Curiosity, Collecting, and the New World

## The beginnings of order in Renaissance natural history

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Though located solidly within the period known as ‘the Scientific Revolution,’ 1560 to 1660 is a period that William Ashworth has identified as being commonly perceived as one of stagnation in the field of natural history.<sup>1</sup> During this same period, which modern historians of science largely disregard for its contributions to natural history, collecting was in vogue among respected European men. Princes, natural historians, and professionals such as doctors and pharmacists were creating collections and displays of curious objects. Known by several different names, these collections could contain bizarre objects from nature, beautiful objects created by man, objects made curious because of their distant origin, or, as was more often the case, an eclectic arrangement of all of these. In fact, to the modern eye, the eclectic nature of these collections is one of their defining features – today it can be extremely challenging to see the uniting thread in collections such as these beyond their penchant for the marvelous. As a tool for scientific understanding, their lack of organization or specialization makes them appear problematic. Thinkers of this period are dismissed because their attempts at ‘science’ seem to be muddled, and mixed with a heavy dose of humanism. Naturalists such as Conrad Gesner and Ulisse Aldrovandi are discounted because they combine biological data with erroneous information such as proverbs and fables.<sup>2</sup> This period also corresponds with a massive influx of New World objects into Europe and these items also appear in collections. Instead of becoming aids for comprehending the larger world, they are valued for their exotic nature. Despite these collections’ appearance as disordered assemblages of the bizarre, order did exist and they do make a contribution to the history of science. The culture of collecting helps to—perhaps somewhat awkwardly—illustrate the transition between a humanistic view of the world, and a scientific one. While conforming to the humanist tendency to depict the world as focused on man, collecting between the middle of the sixteenth and seventeenth centuries shows the beginning of scientific order in the natural world.

Beginning around 1550, collections of strange and marvelous objects from nature, art and science began popping up around Europe. Known variously as *Kunst-* or *Wunderkammern*, museums, or cabinets of curiosity, these collections thrived for around a century, before vanishing.<sup>3</sup> Within this mode there were different types of cabinets; some focused on art, some on scientific information, others were simply collections of bizarre objects.<sup>4</sup> Often collections contained a wide variety of objects spanning these divisions, with a truly encyclopedic scope. But the purpose of these collections was not that of a modern encyclopedia—more spaces of wonder than of inquiry, with “an

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<sup>1</sup> William B. Ashworth, “Natural history and the emblematic world view,” in *Reappraisals of the Scientific Revolution*, ed. David C. Lindberg et al. (Cambridge: University of Cambridge Press, 1990), 303.

<sup>2</sup> *Ibid.*, 304.

<sup>3</sup> Steven Mullancey, “Strange Things, Gross Terms, Curious Customs: The Rehearsal of Cultures in the Late Renaissance,” *Representations* 3 (Summer, 1983), 42.

<sup>4</sup> Peter Mason, “On Producing the (American) Exotic,” *Anthropos* Bd. 91, H. 1.3 (1996), 143.

audience that [was] at once passive and attentive, willing to suspend its critical faculties in order to view ‘strange things’ as precisely that.”<sup>5</sup> While there were exceptions to this rule, especially among groups such as doctors, these collections were not intended as spaces of scientific study so much as ones that created awe, inspired, satisfied curiosity. They often appear to have been designed as microcosms of the larger world, but these microcosms were skewed to show the world of men, not just the natural world. They frequently featured paintings alongside specimens, and scientific instruments appeared as objects of wonder, not utility. Strange objects were more valued than common ones, even though a true miniature of the outside world ought, in our modern eyes, to be proportionate in its ratio of the everyday to the unusual. These cabinets and collections were a way of understanding the world in an era when “science was more preoccupied with accidents than with laws.”<sup>6</sup> Collectors, unable to truly encompass the world, instead surrounded themselves with the best and rarest of its specimens, creating an anthropocentric microcosm.

While visiting Prague, Cardinal Alessandro D’Este was taken on a tour of Holy Roman Emperor Rudolf II’s *Kunstkanmer*. He describes the greatness of the collection as being in direct relation to the greatness of the Emperor, saying that it contained not only paintings but also clocks, objects carved from precious stones and more.<sup>7</sup> The Rudolfin *Kunstkanmer* took up four large rooms while certain objects were housed in their own special cabinets.<sup>8</sup> An inventory was put together between 1607 and 1611 which described the collection as divided roughly into three categories: *Naturalia*, *Artificialia* and *Scientifica* but “the boundaries constantly broke down. Rudolf’s love of the marvelous and monstrous mixed the animal and the vegetable, the animal and the human.”<sup>9</sup> The purpose of Rudolf’s *Kunstkanmer* does not seem to have been a display of scientific order, in fact it was more likely intended as a display of power. For example, his collection housed a planet-clock made by Jost Bürgi with both the Ptolemaic and Copernican systems.<sup>10</sup> Such an instrument, displaying two opposing worldviews, did not seek to explain the world, but rather to illustrate its mysteries.

Following a trend, which frequently appears in association with this type of collection, Rudolf II appreciated the items in his collection for both their scientific and aesthetic value and often failed to clearly distinguish between useful objects and artistic ones.<sup>11</sup> The palace housed many craftspeople employed by the Emperor in creating beautiful objects for his collection. Often they transformed precious or exotic materials into now doubly-precious artifacts.<sup>12</sup> In this way, Rudolf’s collection was an empire in miniature, which he fostered and worked to improve. One example is a ten-foot tall fountain that, by depicting an imperial crown held in the air by an elaborately carved base, “represented the cosmos” and therefore Rudolf’s imperial power.<sup>13</sup> Princely cabinets were ordered collections of objects, but their function was “primarily symbolic, and centre[d] on man rather than on

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<sup>5</sup> Mullancey, “Strange Things”, 42.

<sup>6</sup> Mason, “On Producing the (American) Exotic”, 143.

<sup>7</sup> Thomas DaCosta Kaufmann, “Remarks on the Collections of Rudolf II: The *Kunstkanmer* as a Form of Representation,” *Art Journal* 38, no. 1 (Autumn, 1978), 23.

<sup>8</sup> Peter H. Marshall, *The Magic Circle of Rudolf II: alchemy and astrology in Renaissance Prague* (New York: Walker & Co., 2006), 76.

<sup>9</sup> *Ibid.*, *The Magic Circle of Rudolf II*, 76-7.

<sup>10</sup> *Ibid.*, *The Magic Circle of Rudolf II*, 83.

<sup>11</sup> *Ibid.*, *The Magic Circle of Rudolf II*, 75.

<sup>12</sup> Eliska Fucikova, “The Collection of Rudolf II at Prague: Cabinet of Curiosities or Scientific Museum?” in *The Origins of Museums: the Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, ed. Oliver Impey et al. (Oxford: Clarendon Press, 1985), 52.

<sup>13</sup> Kaufmann, “Remarks on the Collection of Rudolf II”, 25-6.

the natural world.”<sup>14</sup> Collections like Rudolf’s did not derive their value specifically from the objects they contained. Instead their existence communicated the worth and virtue of the collector.<sup>15</sup>

Like the 1607-11 inventory of the Rudolfine *Kunstammer*, collections and cabinets were frequently catalogued or depicted visually. To gain a somewhat wider insight into the purpose and significance of these collections and to judge their scale, scope and organization, let us examine three of these engravings: that of Ferrante Imperato as seen in his 1599 *Dell’historia natural* [Fig. 1], of Ole Worm drawn in 1655 [Fig. 2], and of Manfredo Settala, drawn in 1666 [Fig. 3]. All three of these images show rooms crammed with diverse objects, crowded onto shelves, hung from the ceiling, or simply resting on the floor. One can imagine stepping into such a room and being overawed by the sheer number of objects, and after that had worn off, by how exotic those same objects seemed. Occasionally we can see that some plan of organization exists – like the *Museum Wormianum*, where most of the shelf space is taken up by carefully labeled boxes. Still objects often seem out of place in their grouping; for example, on the ceiling of the Worm collection, a kayak hangs among a variety of preserved fish. It seems to be there out of convenience more than out of design, presumably being the only place it fit. The kayak might also be included among the variety of objects which are clearly in the collection for their unusualness and intrigue value. Imperato’s and Settala’s collection both contain crocodiles, while Settala’s collection is also clearly home to curious items of *artificialia*, and the *Museum Wormianum* features ethnographic objects, perhaps of every-day use, but from distant lands. Looking at these three engravings, we are able to rapidly get a sense of the type of objects collected, but more importantly, a sense of how they were organized, and the wonder they inspired in the onlooker. While showing a minimal degree of scientific order, it should be recognized that these spaces do maintain a sense of aesthetic design. It is especially evident in Settala’s museum that these spaces are organized, though the aesthetic paradigm they conform to is perhaps foreign to the modern eye. The variety of objects found in these collections and the way they were organized is central to understanding their significance to seventeenth-century natural history. The struggle between disorder—the frantic collection of all things interesting—and encyclopedic efforts to collect and categorize knowledge, is a perfect example of the transition taking place away from Renaissance humanism and towards a more modern scientific outlook.

Because collections of this type depend inherently on the interests of the collector, they were extremely personal and their focuses differed greatly. While a princely collection like Rudolf II’s was intended as a representation of his power,<sup>16</sup> collections like that of Ferrante Imperato, owner of Naples’ most famous pharmacy, or University of Bologna professor of natural history, Ulisse Aldrovandi, tends to focus more closely on their specific interests.<sup>17</sup> Even in these collections, however, “it was the rare, outlandish piece that immediately conferred status on a collection and spread its fame beyond the scientific world.”<sup>18</sup> Because of this, obtaining pieces for these collections was an art in and of itself. If a diplomat wanted to see Rudolf II, his best bet would be to present the Holy Roman Emperor with some addition for his collection,<sup>19</sup> and when the Emperor heard of a rare object, he would send agents out to track it down.<sup>20</sup> For collectors less prestigious than Rudolf II, most

<sup>14</sup> Guiseppe Olmi, “Science – Honour – Metaphor: Italian Cabinets of the Sixteenth and Seventeenth Centuries,” in *The Origins of Museums: the Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, ed. Oliver Impey et al. (Oxford: Clarendon Press, 1985), 5.

<sup>15</sup> Kaufmann, “Remarks on the Collection of Rudolf II”, 22.

<sup>16</sup> Kaufmann, “Remarks on the Collection of Rudolf II”, 22.

<sup>17</sup> Olmi, “Science – Honour – Metaphor”, 6.

<sup>18</sup> *Ibid.*, 8.

<sup>19</sup> Marshall, *The Magic Circle of Rudolf II*, 85.

<sup>20</sup> *Ibid.*, 76.

specimens came by way of traders. Objects and creatures might be brought back by sailors or merchants. Occasionally collectors themselves even took up the hunt.<sup>21</sup> On trans-oceanic voyages, the space dedicated to livestock animals for consumption on an outward journey might be filled with local fauna for the return trip. Some of these were to be served up at dinner and some were to be sold as specimens when they arrived in port; crocodiles could be brought on board as food, but after being slaughtered their heads might be preserved as a sellable curiosity. In his 1578 *History of a Voyage to the Land of Brazil*, Jean de Léry describes his attempt to bring specimens home. After telling how the native population made shields from the skin of the tapir, he explains:

I was bringing two of these shields back to France as curiosities; but during our return we were afflicted with famine on the sea, after all our food supplies had been used up, and the monkey, parrots, and other animals that we were bringing back from that country had been used for nourishment we finally had to eat our leather shields.<sup>22</sup>

Though Léry's attempt was thwarted by unforeseen travel complications, travelers and explorers were keenly aware of the interest in the strange and outlandish and pandered to this by filling their holds and caravans with the bizarre. Like the educated collectors to whom they sold their goods, these traders and explorers easily identified the exotic: if it sparked wonder or horror, it would be valued back home.

Logically, the majority of specimens were European, the next greatest number came from South America, then Africa and finally North America.<sup>23</sup> It seems likely that so few specimens returned from North America because of the relative similarity between its flora and fauna and that of Europe,<sup>24</sup> as rich, self-centred collectors didn't want to surround themselves with what might be perceived as ordinary. One of the most popular specimens—identified in the catalogues of ten separate cabinets by Wilma George—was the armadillo. Its scaly carapace was both delightfully curious, and easy to dry and transport home from the Americas.<sup>25</sup> In his travel account, Jean de Léry frequently assesses animals based his perception of how they would be received at home. He describes one large and unusual type of rodent as having “an irregular and badly shaped head,” and goes on to describe their beautiful dappled skin, saying that “If we had any like them over here, they would be highly valued as fur,”<sup>26</sup> at once displaying a European bias against that which is unfamiliar, and an awareness of the value of the exotic. In another example, Léry describes a breed of marmoset, saying, “He is the prettiest little animal that I have seen over there. And indeed if he were as easy to take across the ocean as the monkey is, he would be much more valued.”<sup>27</sup> The popularity of the armadillo and the presumed popularity of Léry's marmoset bring up an interesting problem. New World objects were being brought back to Europe, studied, and displayed. These objects were made worthy of collection simply by being exotic, but their exoticism derived from little more than their unfamiliarity among Europeans.

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<sup>21</sup> Wilma George, “Alive or Dead: Zoological collections in the Seventeenth Century” in *The Origins of Museums: the Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, ed. Oliver Impey et al. (Oxford: Clarendon Press, 1985), 183-5.

<sup>22</sup> Jean de Léry and Janet Whatley, *History of a voyage to the land of Brazil, otherwise called America*, (Berkeley: University of California Press, 1990), 78-9.

<sup>23</sup> George, “Alive or Dead”, 181.

<sup>24</sup> *Ibid.*, 182.

<sup>25</sup> George, “Alive or Dead”, 181.

<sup>26</sup> Léry, *History of a Voyage to the Land of Brazil*, 80.

<sup>27</sup> *Ibid.*, 84.

Just as cabinets of curiosity were a way for the collector to surround himself with a world in miniature, manufactured from the strange and beautiful and imbued with personal meaning, so too the New World became a space onto which meaning was assigned. Léry's view of America is that "all these animals are strangely defective to those of our Europe."<sup>28</sup> Léry's use of the word 'defective' is an opinion. His mind's eye's conception of what is 'normal' does not include the fauna of Brazil. These new creatures are somehow part of another world which is inherently foreign. As European explorers and collectors encountered this flood of strange new information, they made desperate attempts to order it in relation to themselves. This is evidenced by the use of adjectives like "monstrous and terrible,"<sup>29</sup> used to describe objects they do not understand. Instead of truly ordering the information which they find being presented to them, they collect and group it, because it is strange and different. Exoticism is something created by the onlooker, not an inherent trait and in an age before a real attempt to order this information has been made, Europe's intellectual elite instead chose to label it "the exotic."<sup>30</sup> As new lands and their concomitant flora, fauna, and cultures were discovered, the collector who sought out such natural history objects could gain prestige.<sup>31</sup> Their ordering of information, though basic, and largely based on identifying and labeling the most exotic of these discoveries, was still a significant step for which the collector earned respect. After creating the exotic, Europeans then required a way to understand it—the cabinet or collection was a rudimentary attempt to do so.

Modern scholars are decidedly mixed on the matter of whether these collections, cabinets, or *Kunstkammern* were ordered by some rational principle or not. Referring back to the engraved images of collections, it is easy to see why this might be the case. Often the way objects were displayed was haphazard, such as large birds set on high shelves in order to use the space efficiently. Inventories and catalogues of collections display basic groupings such as terrestrial creatures, sea creatures, and birds.<sup>32</sup> Some scholars believe that collections were ordered merely by aesthetic principles, not by some idea of a preexisting order in nature.<sup>33</sup> Following from this, scientific instruments appealed to collectors not for their utility, but for their novelty and aesthetic value in an age when discovery was 'in fashion'.<sup>34</sup> The *Kunstammer* of Rudolf II is a good example of how a collection can appear disorganized to a modern mind. Peter Marshall tells us that in Rudolf's collection little distinction was made between the natural and the artificial,<sup>35</sup> suggesting that Rudolf was unable to see the difference, and its significance. Directly contradicting this opinion, however, Thomas DaCosta Kaufmann says that order was in fact apparent in the emperor's *Kunstammer* and that this can be seen in the 1607-11 inventory which divides the collection into logical sections, showing "that the collection not only had its own system of classification similar to that of other contemporary collections, but also that, like them, it was encyclopedic in scope."<sup>36</sup> The difference of opinion here comes about because while collections were a way of ordering the world, the systems in use were largely visual and personal. Systems of scientific order were still in formation around the turn of the seventeenth century.

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<sup>28</sup> Léry, *History of a Voyage to the Land of Brazil*, 85.

<sup>29</sup> *Ibid.*, 83.

<sup>30</sup> Mason, "The (American) Exotic", 139.

<sup>31</sup> Olmi, "Science - Honour - Metaphor", 8.

<sup>32</sup> George, "Alive or Dead", 186.

<sup>33</sup> Olmi, "Science - Honour - Metaphor", 9.

<sup>34</sup> *Ibid.*, 12.

<sup>35</sup> Marshall, *The Magic Circle of Rudolf II*, 75.

<sup>36</sup> Kaufmann, "Remarks on the Collections of Rudolf II", 24.

In the early 1630s Manfredo Settala inherited his father Lodovico's collection. He continued to acquire items for the museum and it became a significant cultural institution in Milan.<sup>37</sup> Some categories of objects found in the collection included:

Mathematical and physical instruments, precision instruments: mirrors, lenses, telescopes, armillary spheres, astrolabes, timepieces, compasses quasi-perpetual-motion devices, locks, automatons.

Rocks and minerals: quartz, metal ores, asbestos, gems, figured stones, magnets and loadstones, *pietra fungifera*.

Fossil remains: amber, shells, mammals.

Zoological remains: coral, molluscs, fish, reptiles, birds, mammals.

Products of the vegetable kingdom: seeds, woods, oils.

Ethnographic objects: clothes, ornaments and weapons from America, Asia, Africa.

Weapons: crossbows, artillery.

Archeological items: skeletons, urns, lamps.

European craft items, including those worked by Manfredo.

Musical instruments.

Books, prints, drawings, codices.

Paintings, statues, medals.<sup>38</sup>

This massive collection shows yet again both how extensive and thorough a collection in this period could be. The variety of objects is so broad that finding a unifying feature is challenging. If, based on the rest of the evidence which exists for collections like this, we assume that these objects and categories are united by their exotic nature, then it makes a little more sense. Still, the argument that such a collection lacks organization and intention is easily understood. Like all the collections examined in this paper, Settala's collection predates the concept of the museum as we know it today. Our modern concept derives from collections like this being broken down and re-grouped with a cohesive idea uniting its contents.<sup>39</sup> This later development emphasizes again how a collection in this period had not yet developed such order.

Understanding Renaissance natural history, according to Ashworth, means accepting that any information which appears to us to have 'scientific' value, was collected along with a good deal of what appears to be erroneous cultural information. Conrad Gesner, for example, was certain that the only way we would understand the peacock, would be if we also understood how it related to the rest of the universe.<sup>40</sup> In fact, "the notion that the peacock should be studied in isolation from the rest of the universe, and that inquiry should be limited to anatomy, physiology, and physical description, was a notion completely foreign to Renaissance thought."<sup>41</sup> This greatly resembles the world view demonstrated in collections of this period, where an object's connection to the world of man is vastly more important than basic information like the position it holds in the natural world. When the first natural histories of New World animals began appearing at the beginning of the seventeenth century, they contained animals with no known associations.<sup>42</sup> Aside from labeling this new information as 'exotic,' it was hard to incorporate until a new kind of organization could be created. When writing his description of the armadillo, Jean de Léry complains that others had referred to an animal with a

<sup>37</sup> Antonio Aimi, Vincenzo de Michele, and Alessandro Morandotti, "Towards a History of Collecting in Milan in the Late Renaissance and Baroque Periods," in *The Origins of Museums: the Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, ed. Oliver Impey et al. (Oxford: Clarendon Press, 1985), 26.

<sup>38</sup> *Ibid.*.

<sup>39</sup> Mullancey, "Strange Things", 41.

<sup>40</sup> Ashworth, "Natural History", 306.

<sup>41</sup> *Ibid.*, 312.

<sup>42</sup> Ashworth, "Natural History", 318.

similar name, but that his specimen differed from the published illustration. Léry hints that either it is in fact a different species, or that perhaps the illustration was simply sub-par.<sup>43</sup> Not only did these creatures lack a suitable web of known cultural associations, even what they were called and what they looked like had not been fully determined. New World creatures demanded to be ordered and labeled, but the first attempts at this took the form of simply noting the strange and marvelous, and labeling it 'exotic.'

In 1550 an entire false Brazilian landscape, complete with trees, villages, wildlife and inhabitants, was created outside of Rouen, France to celebrate the king's entry into the city.<sup>44</sup> Steven Mullancey explains, however, that this remarkably detailed recreation of a Brazilian village was not intended to aid the understanding of a foreign culture, but rather it was simply a performance put on entirely for the sake of the European audience; not to help them understand the Other, but rather for the sake of a self-centred ritual.<sup>45</sup> One may ask why, in an era when New World information was pouring into Europe at ever increasing rates, this information was being used merely for self-reflection. Or wonder whether collectors and natural historians of the late sixteenth and early seventeenth centuries were totally unable to redirect their gaze towards the rapidly expanding world around them. Finally, one may pause to consider why the collected information was badly organized. We can answer these questions by recognizing that this was an intermediate period in which a subtle change in view was taking place. Between the sixteenth-century's discoveries and the eighteenth-century's progress in biology, seventeenth-century natural history seems uninteresting and slow. "But new plants and animals were pouring into Europe, their variety and number provoking endless questions." This was the age when the ordering of this new information began.<sup>46</sup> What we see when we look at collections like those described above, is a transitional state. The age directly following this period is one in which information is highly lauded, but in the period examined in this paper, the movement toward the age of reason is sporadic at best.

While the main function of Rudolf II's grand collection of marvels may easily have been to impress those around him with his political power, today it is also a resource of objects collected specifically for their intrigue, and a critical opportunity to explore the mind of Renaissance man. By exploring how rare and exotic objects were treated, organized and displayed, we can see what they meant to their collectors. Beautiful paintings, complex clocks, and preserved crocodiles could all be used to shower prestige on their owner, and so long as the display was impressive, they need not have been all that well organized. But these collections were organized, if clumsily, and they serve a function beyond illustrating the prowess of their owners. The culture of collecting which existed between 1550 and 1650, operated in the period during which order was asserting itself in the realm of natural history. As objects poured into Europe from the New World, focus began to shift from how the natural world might inform and reflect the world of men, to how men might reflect on and order the natural world.

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<sup>43</sup> Léry, *History of a voyage to the land of Brazil*, 81.

<sup>44</sup> Mullancey, "Strange things", 45.

<sup>45</sup> *Ibid.*, "Strange things", 48.

<sup>46</sup> George, "Dead or Alive", 179.



Figure 1 The collection of Ferrante Imperato.<sup>47</sup>

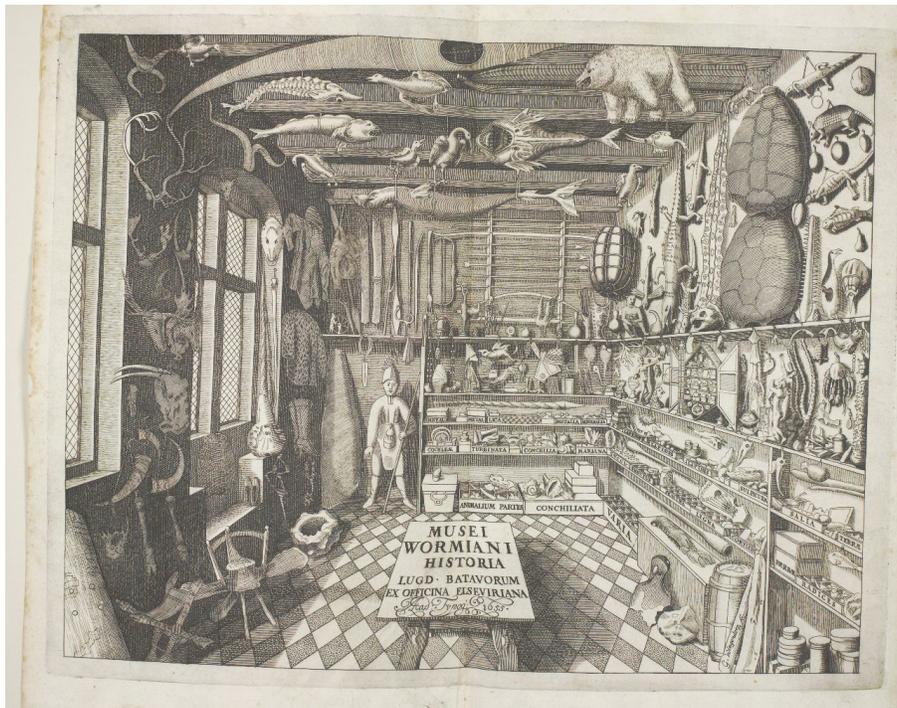


Figure 2 The *Museum Wormianum*.<sup>48</sup>

<sup>47</sup> Ferrante Imperato, *Dell'istoria Naturale*, Naples: C. Vitale, 1599, accessed December 1, 2013, <<http://www.sil.si.edu/Exhibitions/wonderbound/crocodiles.htm>>

<sup>48</sup> Ole Worm, *Museum Wormianum*, Leiden: 1655, accessed December 1, 2013, <<http://www.sil.si.edu/Exhibitions/wonderbound/crocodiles.htm>>

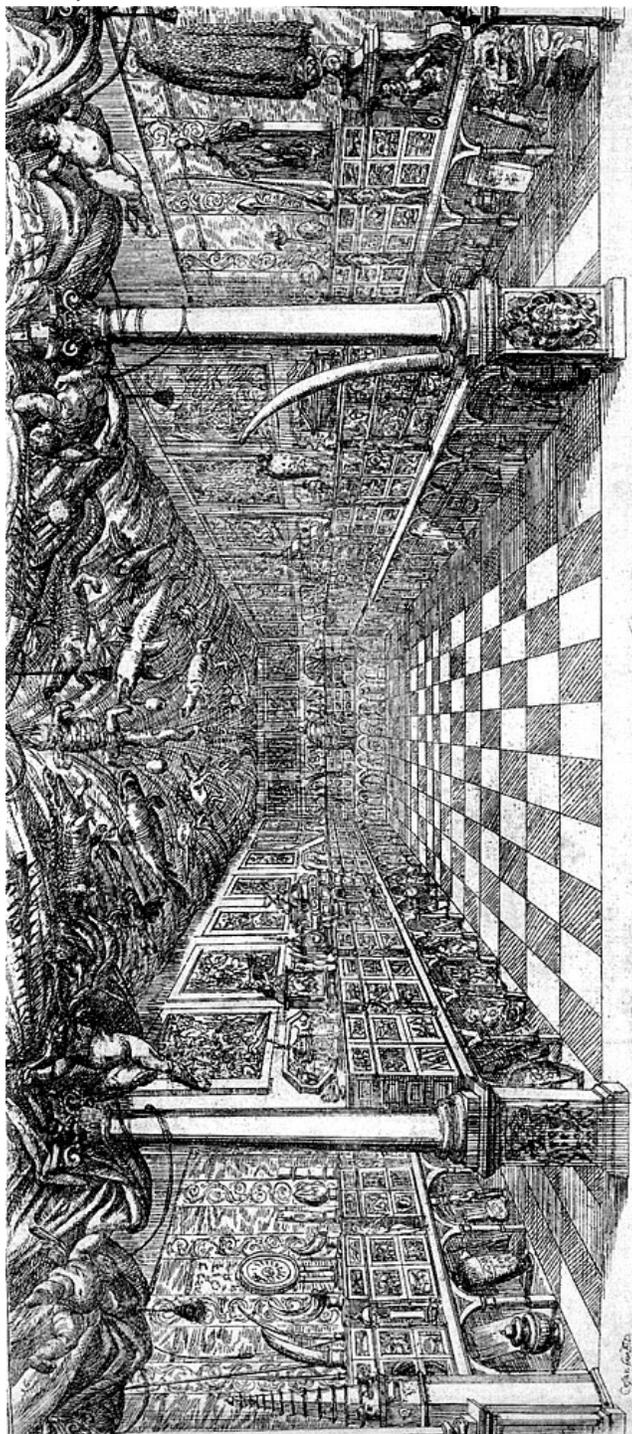


Figure 3 Illustration of the Museum of Manfredo Settala.<sup>49</sup>

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<sup>49</sup> Paolo Maria Terzago, *Museo o Galeria: adunta dal sapere, e dallo studio del sig. Canonical Manfredo Settala*, Milan: 1666, accessed December 1, 2013, <<http://jeffreylancaster.blogspot.ca/2008/02/zymoglyphic-museum-baroque-museum-tour.html>>

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